

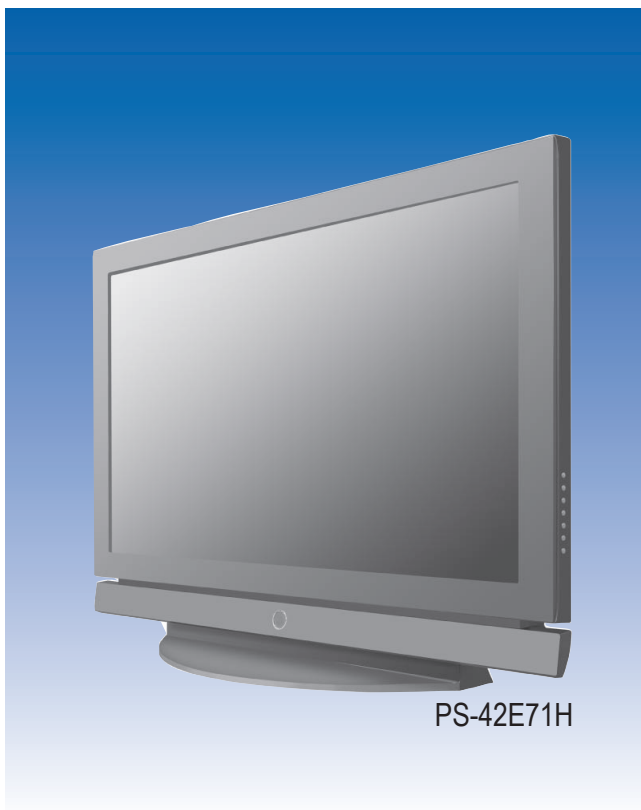


PDP-TELEVISION

Chassis : D74A(P_Europe_42HD)_Audi
Model : PS42E71HX/XEC

SERVICE *Manual*

PDP-TELEVISION



PS-42E71H

FEATURES

- DTV Ready PDP TV
- Supreme Picture Quality
Supreme Convenience Quality
- RF, HDMI, 2 Scart, PC (Analog),
Component, Video, S-Video
- Slim line design
- Energy Saving

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1. Precaution

To avoid possible damages or electric shocks or exposure to radiation, follow the instructions below with regard to safety, installation, service and ESD.

1-1 Safety Precautions

1. Make sure all protective devices are properly installed including non-metallic handles and compartment covers when installing or re-installing the chassis or chassis assemblies.
2. Make sure that no gaps exist between the cabinets for children to insert their fingers in to prevent children from receiving electric shocks. Gaps mentioned above include ventilation holes of a too great magnitude between the PDP module and the cabinet mask, and the improper installation of the rear cabinet.

Errors may occur when the resistance is below 1.0 MΩ or over 5.2 MΩ.
In these cases, make sure that the device is repaired before sending it back to the customer.

3. Check for Electricity Leakage (Figure 1-1)
Warning: Do not use an insulated transformer for checking the leakage. Use only those current leakage testers or mirroring systems that comply with ANSIC 101.1 and the Underwriter Laboratory's specifications (UL1410, 59.7).

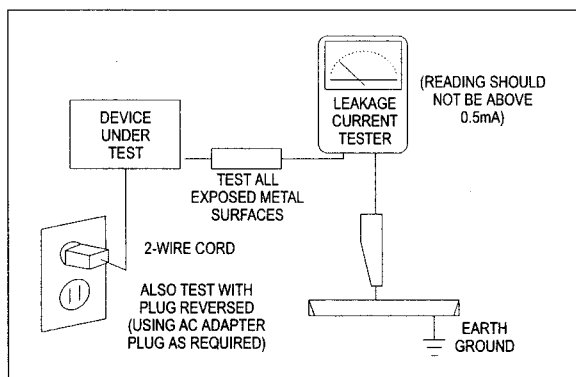


Fig. 1-1 AC Leakage Test

4. A high voltage is maintained within the specified limits using safety parts, calibration and tolerances. When voltage exceeds the specified limits, check each special part.

5. Warning for Engineering Changes:
Never make any changes or additions to the circuit design or the internal part for this product.
Ex: Do not add any audio or video accessory connectors. This might cause physical damage.
Furthermore, any changes or additions to the original design/engineering will invalidate the warranty.

6. Warning - Hot Chassis:
Some TV chassis are directly connected to one end of the AC power cord for electrical reasons.
Without insulated transformers, the product can only be repaired safely when the chassis is connected to the earthed end of the AC power source.

To make sure the AC power cord is properly connected, follow the instructions below. Use the voltmeter to measure the voltage between the chassis and the earthed ground. If the measurement is over 1.0V, unplug the AC power cord and change the polarity before re-inserting it. Measure the voltage between the chassis and the ground again.

7. Some TV chassis are shipped with an additional secondary grounding system. The secondary system is adjacent to the AC power line. These two grounding systems are separated in the circuit using an unbreakable/unchangeable insulation material.
8. When any parts, material or wiring appear overheated or damaged, replace them with new regular ones immediately. When any damage or overheating is detected, correct this immediately and make a regular check of possible errors.
9. Check for the original shape of the lead, especially that of the antenna wiring, any sharp edges, the AC power and the high voltage power. Carefully check if the wiring is too tight, incorrectly placed or loose. Never change the space between the part and the printed circuit board. Check the AC power cord for possible damages. Keep the part or the lead away from any heat-emitting materials.

Precaution

10. Safety Indication:

Some electrical circuits or device related materials require special attention to their safety features, which cannot be viewed by the naked eye. If an original part is replaced with another irregular one, the safety or protective features will be lost even if the new one has a higher voltage or more watts.

Critical safety parts should be bracketed with (⚠ ⚠).
Use only regular parts for replacements (in particular, flame resistance and dielectric strength specifications).
Irregular parts or materials may cause electric shock or fire.

1-2 Servicing Precautions

Warning 1: First carefully read the "Safety Instruction" in this service manual.

When there is a conflict between the service and the safety instructions, follow the safety instruction at all times.

Warning 2: Any electrolytic capacitor with the wrong polarity will explode.

1. The service instructions are printed on the cabinet, and should be followed by any service personnel.
2. Make sure to unplug the AC power cord from the power source before starting any repairs.
 - (a) Remove or re-install parts or assemblies.
 - (b) Disconnect the electric plug or connector, if any.
 - (c) Connect the test part in parallel with the electrolytic capacitor.
3. Some parts are placed at a higher position than the printed board. Insulated tubes or tapes are used for this purpose. The internal wiring is clamped using buckles to avoid contact with heat emitting parts. These parts are installed back to their original position.
4. After the repair, make sure to check if the screws, parts or cables are properly installed. Make sure no damage is caused to the repaired part and its surroundings.
5. Check for insulation between the blade of the AC plug and that of any conductive materials (i.e. the metal panel, input terminal, earphone jack, etc).
6. Insulation Check Process: Unplug the power cord from the AC source and turn the switch on. Connect the insulating resistance meter (500v) to the AC plug blade.
7. Any B+ interlock should not be damaged.
If the metal heat sink is not properly installed, no connection to the AC power should be made.
8. Make sure the grounding lead of the tester is connected to the chassis ground before connecting to the positive lead. The ground lead of the tester should be removed last.
9. Beware of risks of any current leakage coming into contact with the high-capacity capacitor.
10. The sharp edges of the metal material may cause physical damage, so ensure wearing protective gloves during the repair.
11. Due to the nature of plasma display panels, partial after-images may appear if a still picture is displayed on the screen for a long period of time.
This is caused by brightness deterioration due to the storage effect of the panel, and to prevent this from happening, we recommend that the brightness and contrast are reduced.
(e.g.) Contrast: 25, Brightness: 50

The insulating resistance between the blade of the AC plug and that of the conductive material should be more than 1 MΩ.

1-3 Static Electricity Precautions

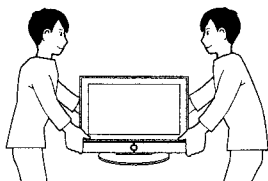
1. Some semi-conductive ("solid state") devices are vulnerable to static electricity. These devices are known as ESD. ESD includes the integrated circuit and the field effect transistor. To avoid any materials damage from electrostatic shock, follow the instructions described below.
2. Remove any static electricity from your body by connecting the earth ground before handling any semi-conductive parts or ass'ys. Alternatively, wear a dischargeable wrist-belt.
(Make sure to remove any static electricity before connecting the power source - this is a safety instruction for avoiding electric shock)
3. Remove the ESD ass'y and place it on a conductive surface such as aluminum foil to prevent accumulating static electricity.
4. Do not use any Freon-based chemicals.
Such chemicals will generate static electricity that causes damage to the ESD.
5. Use only grounded-tip irons for soldering purposes.
6. Use only anti-static solder removal devices.
Most solder removal devices do not support an anti-static feature. A solder removal device without an anti-static feature can store enough static electricity to cause damage to the ESD.
7. Do not remove the ESD from the protective box until the replacement is ready. Most ESD replacements are covered with lead, which will cause a short to the entire unit due to the conductive foam, aluminum foil or other conductive materials.
8. Remove the protective material from the ESD replacement lead immediately after connecting it to the chassis or circuit ass'y.
9. Take extreme caution in handling any uncovered ESD replacements. Actions such as brushing clothes or lifting your leg from the carpet floor can generate enough static electricity to damage the ESD.

CAUTION

These servicing instructions are for use by qualified service personnel only.
To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

1-4 Installation Precautions

1. For safety reasons, more than two people are required for carrying the product.



2. Keep the power cord away from any heat emitting devices, as a melted covering may cause fire or electric shock.
3. Do not place the product in areas with poor ventilation such as a bookshelf or closet. The increased internal temperature may cause fire.
4. Bend the external antenna cable when connecting it to the product. This is a measure to protect it from being exposed to moisture. Otherwise, it may cause a fire or electric shock.
5. Make sure to turn the power off and unplug the power cord from the outlet before repositioning the product. Also check the antenna cable or the external connectors if they are fully unplugged. Damage to the cord may cause fire or electric shock.
6. Keep the antenna far away from any high-voltage cables and install it firmly. Contact with the high-voltage cable or the antenna falling over may cause fire or electric shock.
7. When connecting the RF antenna, check for a DTV receiving system and install a separate DTV reception antenna for areas with no DTV signal.
8. When installing the product, leave enough space (4") between the product and the wall for ventilation purposes.
A rise in temperature within the product may cause fire.
9. When moving a PDP with removable speakers, detach the speakers first before moving the main body.
Moving the PDP main body without separating the speakers may cause the speakers to detach, possibly causing damage or injury.

MEMO

2. Product Specification

2-1 Product Features

Block	Specification	Major IC	Remark
RF	Tuner	TCLW3001PD32S(H)	SEMCO
Power	Input Voltage : AC 220 - 240 V~, 50 Hz		
Video	Scaler	SVP-PX	TRIDENT
	Video Decoder		
Sound	Sound Processor	STV8257DSX	ST Microelectronics
	Sound AMP	STA323W	ST Microelectronics
	Audio S/W	MM74HC4052	
PDP Module	Samsung SDI V5.1	42"HD	SAMSUNG SDI
Remocon	TM86		
Cabinet	E7		

■ Chip Description

- SVP-PX (IC611) : SVPTMPX contains dual-purposed triple 10-bit high-precision and high speed video ADCs for both PC and video inputs, the high speed HDMI could support all HDMI inputs up to 135MHz with HDCP format, the high-performance multi-format 3D digital comb video decoder that supports NTSC, PAL, and SECAM*, a HDTV sync separator, motion adaptive de-interlacing engine, and the video format conversion engine, supporting multi-window display in many different output modes.
- STV8257DSX (IC503) : Digital Audio Decoder/Processor
- STA323W (IC505) : Audio power amplifiers

2-2 Key Features

Model	PS-42E7H
Screen Size	107 Cm / 42 Inches (16:9)
Dimensions	1425(W) x 114(D) x 825.4(H) mm
Weight	33 Kg
Voltage	EU : AC 220-240V~, 50Hz CIS : AC 100-240V~, 50/60Hz
Colour System	PAL, SECAM, NT3.58, NT4.43
Sound System	BG, DK, I, L
Number of Pixels	1024(H) X 768(V)
ANTENNA input	VHF, UHF (75Ω unbalanced)
VIDEO input	SCART1, SCART2 AV (Side), S-VIDEO (Side) COMPONENT IN (480i/P, 576i/P, 720P, 1080i) PC IN (MINI D-SUB 15P) HDMI/DVI IN
AUDIO input	SCART1, SCART2 AV (Side), S-VIDEO (Side) Component PC DVI
Audio Output	AUDIO OUT Headphone (Side)
Speaker Output	10W + 10W (8Ω)

■ H/W Configuration

- Video : SVP-PX
- Sound : STA8257DSX, STA323W
- Tuner : TCLW3001PD32S (H)

■ S/W Configuration

- Main Micom : M30840SGP (IC202)
- Sub Micom : 3F866BXZZ (IC207)

■ Picture

- System : Video → PAL/SECAM/NTSC4.43, Sound → Analog
- Progressive
- Output resolution : 1024*768
- OSD : Smart user Interface
- Picture Enhancement : FBE
- Still picture, Noise reduction
- Comb Filter : 3D comb filter
- PIP : Large
- Panorama : Wide

■ Sound

- System : Stereo
- Output : 10W + 10W
- Speaker : built-in

■ Feature

- Component Interface (480i/480p/576i/576p/720p/1080i, Y/Pb/Pr)
- Digital Interface : HDMI
- Picture Size : Auto Wide/16:9/Wide4:3/Zoom/4:3
- Auto Store
- Sleep Timer : 180 minute
- Clock
- Zoom, Previous channel, Blue Screen, Color Tone, Screen Burn Protection

■ Remocon

- TM86

■ Power Supply

- EU : AC 220-240V, 50Hz
- CIS : AC 100-240V~, 50/60Hz

■ Power Consumption



- Max Power : 360 W

- Both screen position and size will vary depending on the type of PC monitor and its resolution.
The table below shows all of the display modes that are supported. (N : Negative, P : Positive)

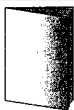




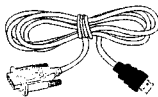



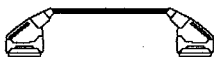

Video Signal	Resolution (Dot X Line)	Vertical frequency (Hz)	Horizontal frequency (kHz)	Vertical polarity	Horizontal polarity
IBM PC / AT Compatible	640 X 350	70.086	31.469	P	N
	720 X 400	70.087	31.469	N	P
	640 X 480	59.940	31.469	N	N
		70.000	35.000	N/P	N/P
		72.809	37.861	N	N
		75.000	37.500	N	N
	800 X 600	56.250	35.156	N/P	N/P
		60.317	37.879	P	P
		70.000	43.750	N/P	N/P
		72.188	48.077	P	P
		75.000	46.875	P	P
	848 X 480	60.000	31.020	P	P
		74.769	37.684	P	N
	1024 X 768	60.004	48.363	N	N
		70.069	56.476	N	N
		72.000	57.672	N/P	N/P
		75.029	60.023	P	P

- ▶ The interlace mode is not supported.
- ▶ The television might operate abnormally if a non-standard video format is selected.
- ▶ 480i/p, 576i/p, 720p, or 1080i is not available in pc mode.
- ▶ The PC text quality is optimum in XGA mode (1024 x 768@60Hz).

2-3 Specifications Analysis

Model		PS-42E7H (Audi-42HD)	Puccini(V4)
Design			
Basic	Display Type	PDP TV	PDP TV
	Built-In Tuner	O	O
	Resolution	1024 x 768	1024 x 768
	PDP Module	V5.1	V4
	Screen Size	42 inches	42 inches
	Aspect Ratio	16 : 9	16 : 9
	Power Consumption	360 W	380 W
	Dimensions	1425(W) x 114(D) x 825.4(H) mm	1050(W) x 86(D) x 755(H) mm
	Weight	33 Kg	59.2 Kg
Picture	Brightness	1,100 Cd/m2	1,300 Cd/m2
	Contrast Ratio	5000:1	10,000 : 1
	Image Enhancer	FBE	DNle-L
Audio	Equalizer	O	O
	Auto Volume	O	O
	Surround Sound	SRS TruSurround	SRS TruSurround
	Speaker Output	10 W + 10 W	15 W + 15 W
	Speaker	Included	Included
Features	PIP	O	O
	Double Screen	X	O
	TTX	O	O
	Still Image	O	O
	My Color Control	X	O
	Color Weakness	X	O
	Energy Saving	O	O
	Screen Burn Protection	O	O
Connections	Antenna	1 Input	1 Input
	CVBS	1 AV	1 AV
	S-Video	1 Input	1 Input
	Component(Y/PB/PR)	1 Input	1 Input
	PC(D-SUB)	1 Input	1 Input
	DVI	X	X
	HDMI	1 Input	1 Input
	Sub Woofer	X	X
	Optical	X	X
	Coaxial	X	X

2-4 Accessories

Accessories		Item	Item code	Remark
Supplied Accessories		User Manual	BN68-00989T	Samsung Service center
		Remote Control AAA Batteries	BN59-00531A 4301-000103	
		Power Cord	3903-000145	
Accessories that can be purchased additionally		S-VIDEO Cable	-	Internal shopping mall
		HDMI Cable	-	
		HDMI/DVI cable	-	
		Component Cables (RCA)	-	
		PC Cable	-	
		PC Audio Cable	-	
		Scart Cable	-	
		Antenna Cable	-	

MEMO

3. Alignment & Adjustment

3-1 Service Instruction

※ The ASS'Y code can be changed, see "5 Chapter. Electrical Part List."

* Check items listed after changing each

Replaced Items	Code No.	Check Items
ASSY PCB MISC-MAIN	BN94-00837A	1) Auto Program 2) Let the user go through subscription process after contacting user's cable service provider.
ASSY PCB P-SMPS(MAIN)	BN96-03052A	Vs, Va voltage check and adjust
ASSY PCB P-SMPS(DC DC)	BN96-01856A	Output voltage check and adjust
ASSY PDP P-LOGIC BOARD	BN96-03355A	Not adjustment
ASSY PDP P-X MAIN BOARD	BN96-03350A	
ASSY PDP P-Y MAIN BOARD	BN96-03351A	
ASSY PDP P-Y MAIN SCAN BOARD	BN96-03352A	
ASSY PDP P-ADDRESS E BUFF BOARD	BN96-03353A	
ASSY PDP P-ADDRESS F BUFF BOARD	BN96-03354A	

※ When replacing the SMPS or PDP panel, you have to check the voltage printed on the panel sticker and adjust it.

3-2 Factory Mode Adjustments

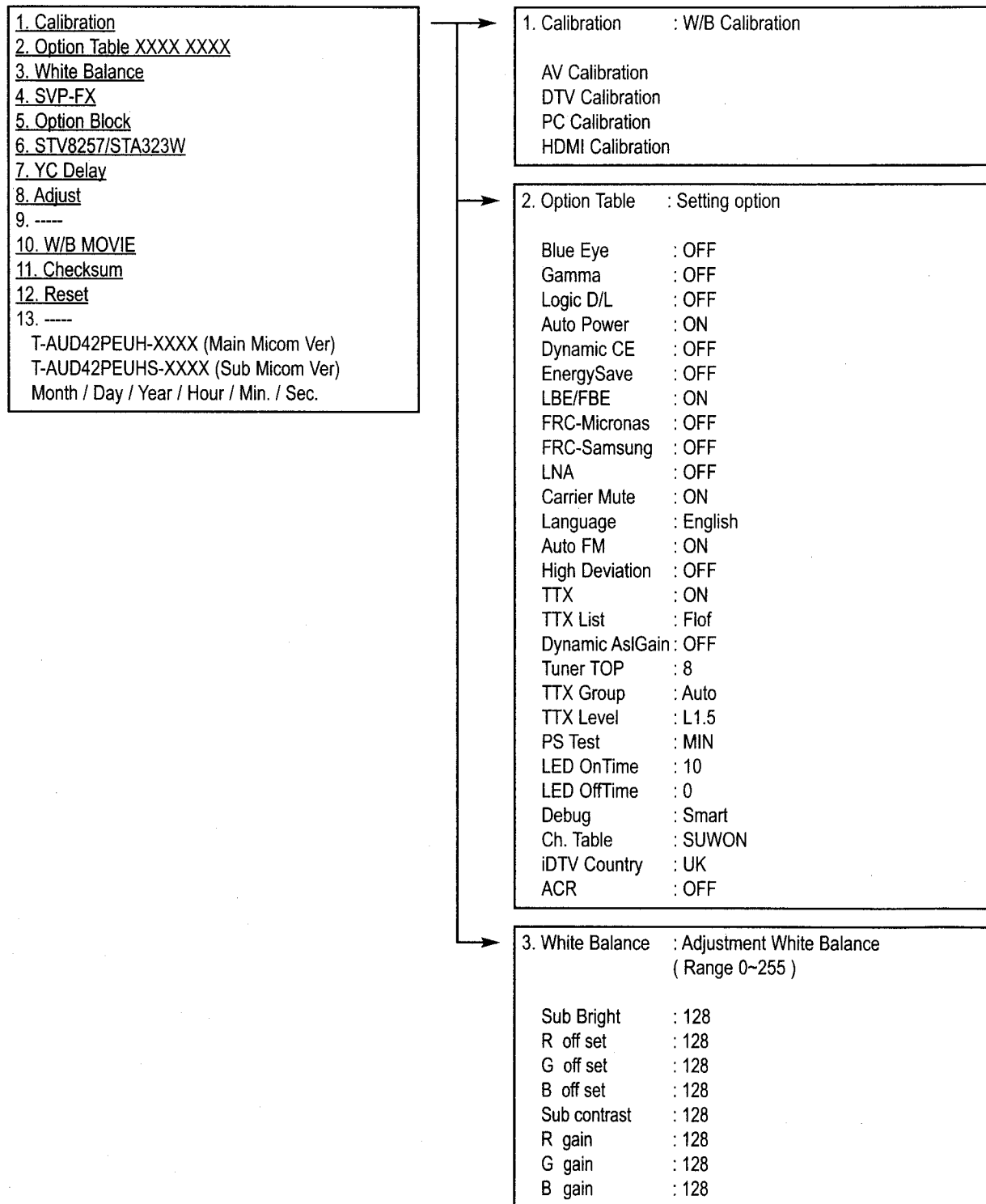
3-2-1 Entering Factory Mode

To enter 'Service Mode' Press the remote -control keys in this sequence :

- If you do not have Factory remote - control : Power Off → INFO → MENU → MUTE → Power On
- If you have Factory remote - control : Power On → INFO → FACTORY
- The buttons are active in the service mode.
 - ① Remote - Control Key : Power, Arrow Up, Arrow Down, Arrow Left, Arrow Right, Menu, Enter, Number Key (0~9)
 - ② Function - Control Key : Power, CH +, CH -, VOL +, VOL -, Menu, TV/VIDEO (Enter)

3-2-2 Factory Mode Tree ★ The underlined are items applied during the service adjustment. None of the others should be adjusted.

If you have Factory remote - control : INFO → FACTORY



Alignment & Adjustment

1. Calibration
2. Option Table XXXX XXXX
3. White Balance
4. SVP-FX
5. Option Block
6. STV8257/STA323W
7. YC Delay
8. Adjust
9. -----
10. W/B MOVIE
11. Checksum
12. Reset
13. -----

T-AUD42PEUH-XXXX (Main Micom Ver)
T-AUD42PEUHS-XXXX (Sub Micom Ver)
Month / Day / Year / Hour / Min. / Sec.

4. SVP-PX	: SVP-PX Correct Register
ComB Filter	: Y-Filter - 80H
Sharpness	: RF/AV COMP PC HDMI
H2Gain	0DH 10H 10H 08H
H4Gain	04H 04H 04H 00H
V2Gain	0CH 10H 10H 08H
V4Gain	04H 04H 04H 04H
Sr2Gain	00H 00H 00H 00H
Sr4Gain	00H 00H 00H 00H
Sl2Gain	00H 00H 00H 00H
Sl4Gain	00H 00H 00H 00H
Peakth1	00H 00H 00H 00H
Peakth2	80H 80H 80H 80H
Peakth3	00H 00H 00H 00H
NR	: YNROFF 80H
	CNROFF 80H
	YNRON 80H
	CNRON 80H
RGB Calibration	: RF/AV COMP PC HDMI
R-Offset	4EH 4BH 48H 3BH
G-Offset	4EH 4BH 48H 3BH
B-Offset	4EH 4BH 48H 3BH
R-Gain	7CH 7BH 80H 9DH
G-Gain	7CH 7BH 80H 9DH
B-Gain	7CH 7BH 80H 9DH
ADC Calibration	: RF/AV COMP PC HDMI
TCD3 Contrast	84H 78H 78H 78H
TCD3 Brightness	23H 20H 20H 20H
TCD3 CR	80H 80H 80H 80H
TCD3 CB	80H 80H 80H 80H
TCD3 Delay	00H 00H 00H 00H
Analog Y Offset	40H 40H 42H 40H
Analog PB Offset	80H 80H 39H 80H
Analog PR Offset	80H 80H 39H 80H
Analog Y Gain	D6H CBH CFH D6H
Analog PB Gain	FEH 9AH 80H FEH
Analog PR Gain	FEH 9AH 80H FEH
Black Level	00H 00H 00H 00H
SVP Brightness	00H 00H 00H 00H
Calibration Target	: low high delta
AV ADC	10H F8H 04H
COMP ADC	10H F8H 04H
PC ADC	04H F8H 04H
ALL RGB	04H F8H 10H

1. Calibration
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T-AUD42PEUH-XXXX (Main Micom Ver)
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 Month / Day / Year / Hour / Min. / Sec.

5. Option Block

FRC-Micronas		
FRC-Samsung		
LBE/FBE	: Test Pattern	00H
	Black Stretch Tilt	50H
	Black Stretch Gain	55H
	Black Stretch Ratio	33H
	Skin En	01H
	Skin Gain	80H
	Skin T X	70H
	Skin T Y	64H
	White En	00H
	MCM Gain	80H
	White T X	4FH
	White T Y	54H
	CHY Gain1	3EH
	CHY Gain2	42H
	CHC Gain1	40H
	CHC Gain2	40H
	CHM Gain1	3DH
	CHM Gain2	45H
	ColorGain TY	00H
	ColorGain TC	00H
	ColorGain TM	00H
	Color Gain	80H
	Input RGB Gain	80H
	Input RGB Offset	00H

6. STV8257/STA323W : Sound IC Correct Register

Ch1 Volume	: 55H
Ch2 Volume	: 55H
AGC Gain	: 07H
AM Prescale	: 00H
ZWT TH	: 0AH
AV Delay	: 55H
Comp Delay	: 32H
HDMI Delay	: 32H
PC Delay	: 32H
L1 Att/Rel Th	: EFH

Alignment & Adjustment

1. Calibration
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T-AUD42PEUH-XXXX (Main Micom Ver)
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Month / Day / Year / Hour / Min. / Sec.

7. YC Delay	
PAL B/G	: 99H
PAK D/K	: 88H
PAL I	: 88H
SECAM B/G	: 88H
SECAM D/K	: 77H
SECAM L/L'	: 66H
NTSC 3.58	: 96H
NTSC 4.43	: CCH
AV PAL	: A9H
AV SECAM	: 66H
AV NT3.58	: 98H
AV NT4.43	: CCH
AV PAL60	: 77H

8. Adjust	
V Mute Time	: 10
Melody Volume	: 9
Ana_Dimm_Max	: FEH
TTX Contrast	: 50
TTX Brightness	: 50
TTX Color	: 50
Dynamic Contrast	: 100
Dynamic Sharpness	: 60
Standard Contrast	: 90
Standard Brightness	: 80
Standard Color	: 70
Standard Sharpness	: 70
Movie Contrast	: 60
Movie Brightness	: 50
Movie Color	: 50
Movie Sharpness	: 40
LNA PLUS	: RFDB-1 Level 2
	RFDB-2 Level 5
	RFDB-3 Level 9
	RFDB-4 Level 24
Hotel Option	: Hotel Mode OFF
	PWR On CH 1
	PWR On Vol. 10
	Max Volume 100
	L.Key Lock OFF
	PWR On Src RF

9. ----

<u>1. Calibration</u>
<u>2. Option Table XXXX XXXX</u>
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T-AUD42PEUHS-XXXX (Sub Micom Ver)
Month / Day / Year / Hour / Min. / Sec.

10. W/B MOVIE	RF/AV	COMP	PC	HDMI
WB Movie	OFF	OFF	OFF	OFF
Color Mode	Movie	Movie	Movie	Movie
Color Tone	Warm2	Warm2	Warm2	Warm2
W1 R Gain	130	129	130	134
W1 B Gain	117	118	119	120
W1 R Offset	138	137	138	138
W1 B Offset	119	114	115	122
W2 R Gain	132	133	134	136
W2 B Gain	115	114	115	116
W2 R Offset	141	140	141	141
W2 B Offset	115	112	113	116
Movie Contrast	70	70	70	70
Movie Brightness	50	50	50	50
Movie Color	45	45	45	45
Movie Sharpness	25	25	25	25

11. Checksum

12. Reset

13. ----

3-3 Service Adjustment

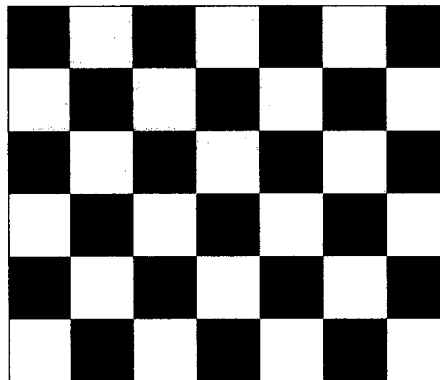
3-3-1 White Balance - Calibration

If picture color is wrong, do calibration first.

Execute calibration in Factory Mode

1. Source : VIDEO
2. Setting Mode : PAL Video (MODE : #2)
3. Pattern : Pattern #24 (Chess Pattern)
4. Use Equipment : K-7256 or Equipment of equality level
5. Work order
 - 1) Enter by Factory Mode select "1.CALIBRATION".
 - 2) Select "AV CALIBRATION" again in CALIBRAION MENU.
 - 3) After Completing Calibration, come out "Av success". OSD on the screen (bottom-side) for about 3 seconds.

Source AV : PAL composite, Component : 1280*720/60Hz
PC : 1024*768/60Hz



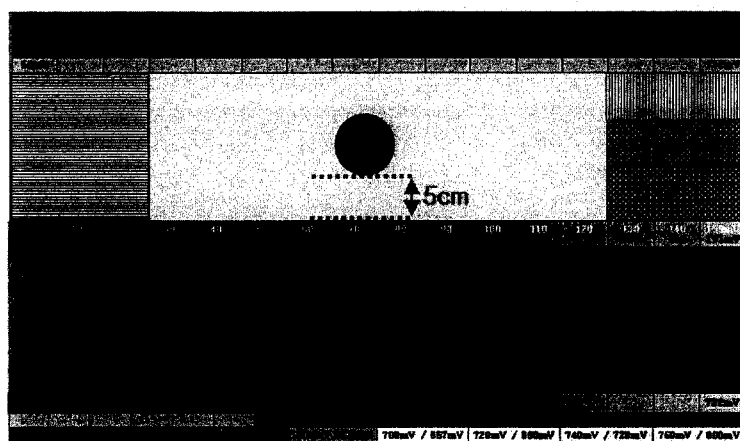
(Chess Pattern)

3-3-2 White Balance - Adjustment

If picture color is wrong, check White Balance condition.

Equipment : CA210, Patten : Toshiba
Adjust W/B in Factory Mode

Sub brightness and R/G/B Offset controls low light region
Sub contrast and R/G/B Gain controls high light region
Source AV : PAL composite, Component : 1280*720/60Hz,
HDMI[DVI] : 1280*720/60Hz



[Test Pattern : MSPG-945 Series Pattern #16]

* Color temperature
1500K +/-500, -6 ~-20 MPCD

* Color coordinate
H/L : 270/280 +/- 2
L/L : 270/280 +/- 3, 2.1 Ft +/-0.05 Ft

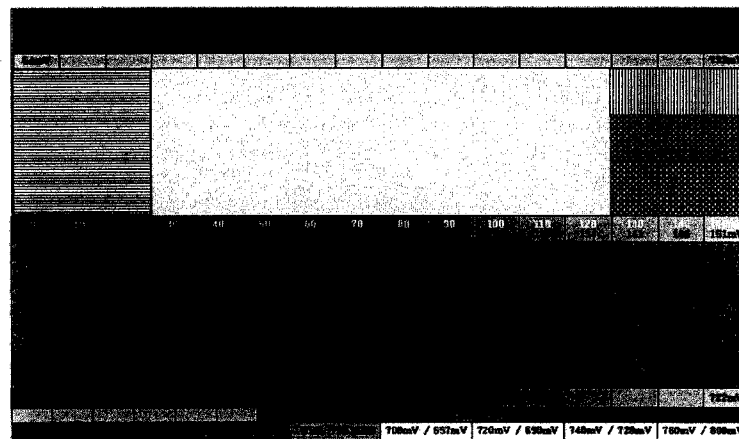
(SAMSUNG WHITE BALANCE Adjustment PATTERN with FPD)

3-3-3 Conditions for Measurement

1. On the basis of toshiba ABL pattern : High Light level (57 IRE)
 - INPUT SIGNAL GENERATOR : MSPG-925LTH
 - * Mode No 2 : 744X484@60 Hz
 - No 6 : 1280X720@60 Hz
 - No 21 : 1024X768@60 Hz
 - * Pattern No 36 : 16 Color Pattern
 - No 16 : Toshiba ABL Pattern
2. Optical measuring device : CA210 (FL)
Please use the MSPG-925 LTH generator for model PS-42E7H / PS-42E7HD / PS-42C7H.

3-3-4 Method of Adjustment

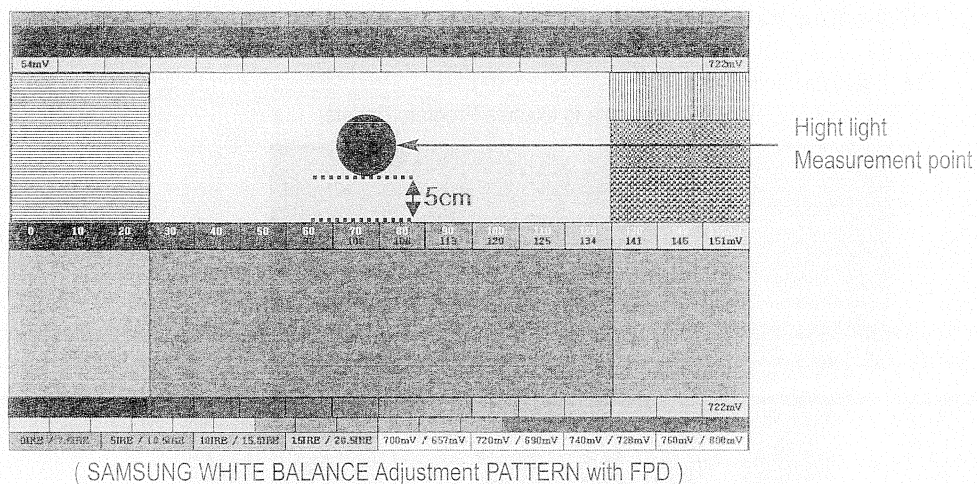
1. Adjust the white balance of AV, Component and DVI Modes.
(AV → Component)
 - a) Set the input to the mode in which the adjustment will be made (RF → DTV → PC → DVI).
 - * Input signal - VIDEO Mode : Model #2 (744*484 Mode), Pattern #16
 - DTV, DVI Mode : Model #6 (1280*720 Mode), Pattern #16
 - HDMI Mode : Model #6 (1280*720 Mode), Pattern #16
 - b) Enter factory color control, confirm the data.
 - c) Adjust the low light. (Refer to table 1, 2 in adjustment position by mode)
 - Adjust sub - Brightness to set the 'Y' value.
 - Adjust red offset ('x') and blue offset ('y') to the color coordinates.



(SAMSUNG WHITE BALANCE Adjustment PATTERN with FPD)

* Do not adjust green offset data.

- d) Adjust the high light. (Refer to table 1, 2 in adjustment position by mode)
 - Adjust red gain ('x') and blue gain ('y') to the color coordinates.



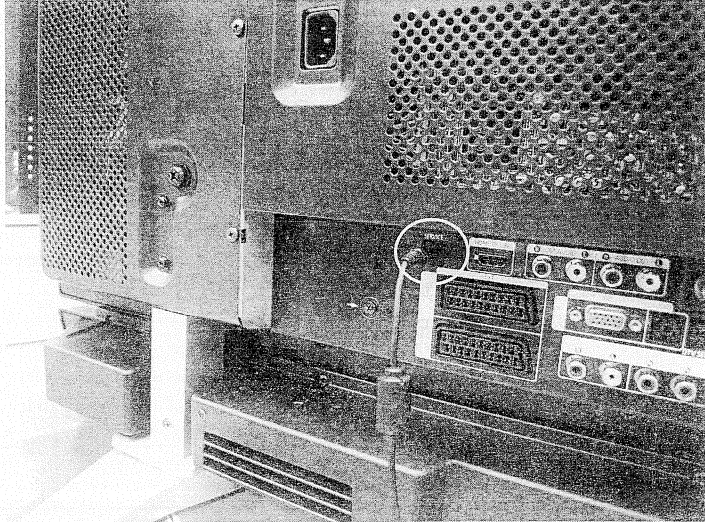
* Do not adjust the green gain and sub-contrast (Y) data.

3-4 Software Upgrade

3-4-1 How to Update Flash ROM

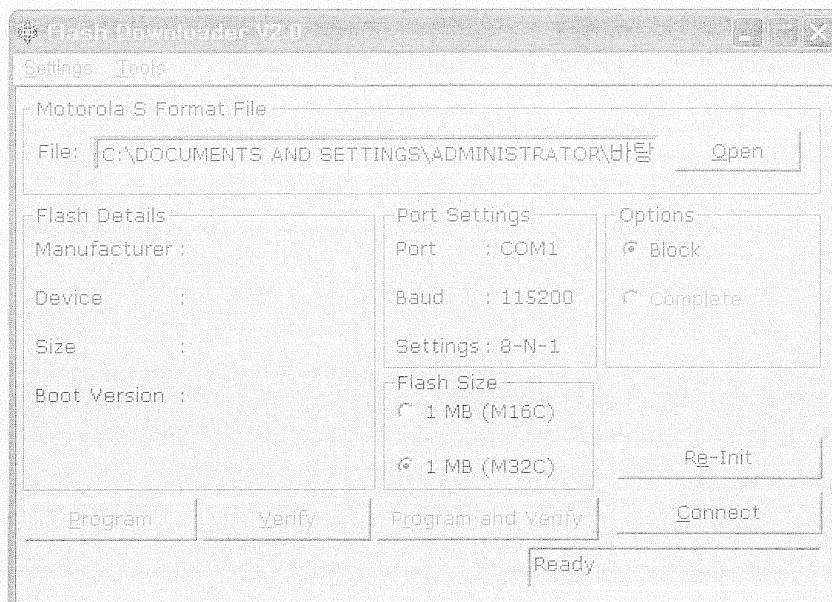
1. Install the Flash Downloader

Connect Set (Service Jack) and Jig Cable to execute Program Update.



2. Flash Downloader program update

- Before Turning on the set, Click "connect" which is under of OSD Screen.
- Turn on the Set.

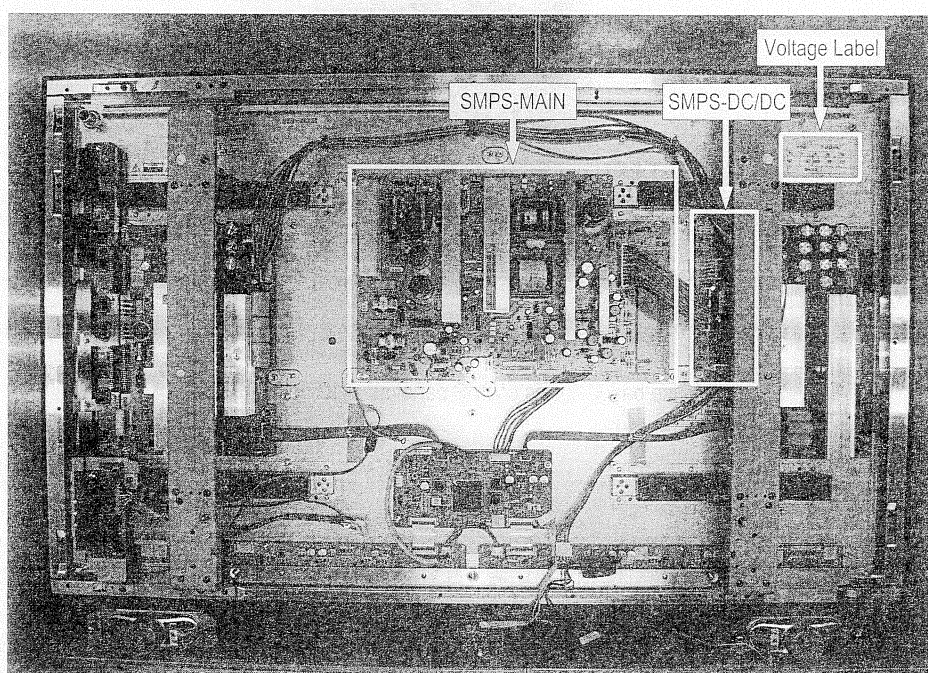


3-5 Replacements & Calibration

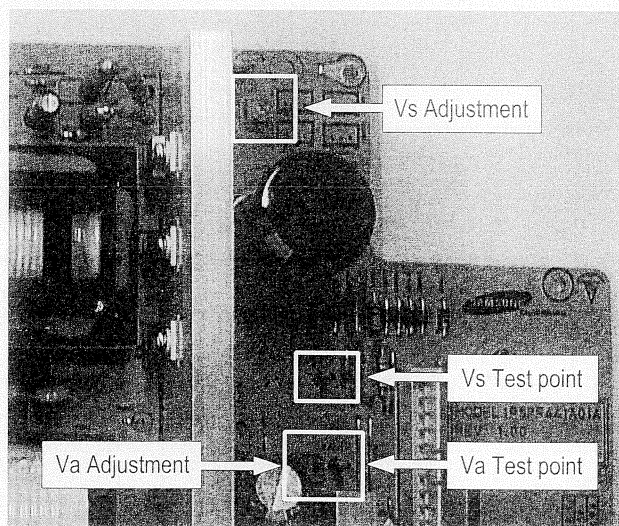
3-5-1 Voltage Adjustment

1. SMPS Panel voltages must be adjusted after changing SMPS-PCB or PDP module.

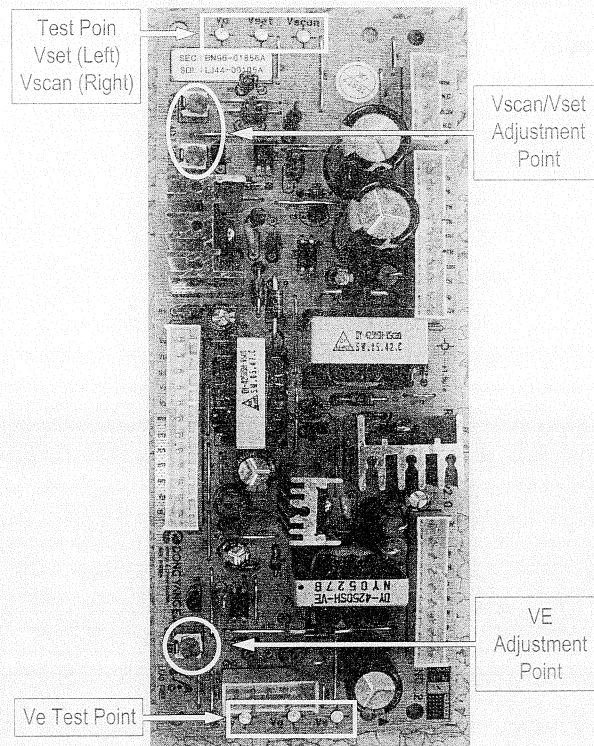
	Value	Board Adjustment
Vs	200	SMPS-MAIN
Va	65	
Vset	195	SMPS-DC/DC
Ve	120	
Vscan	-190	



2. A point of adjusting SMPS-MAIN voltage.



3. A point of adjusting SMPS-DC/DC.

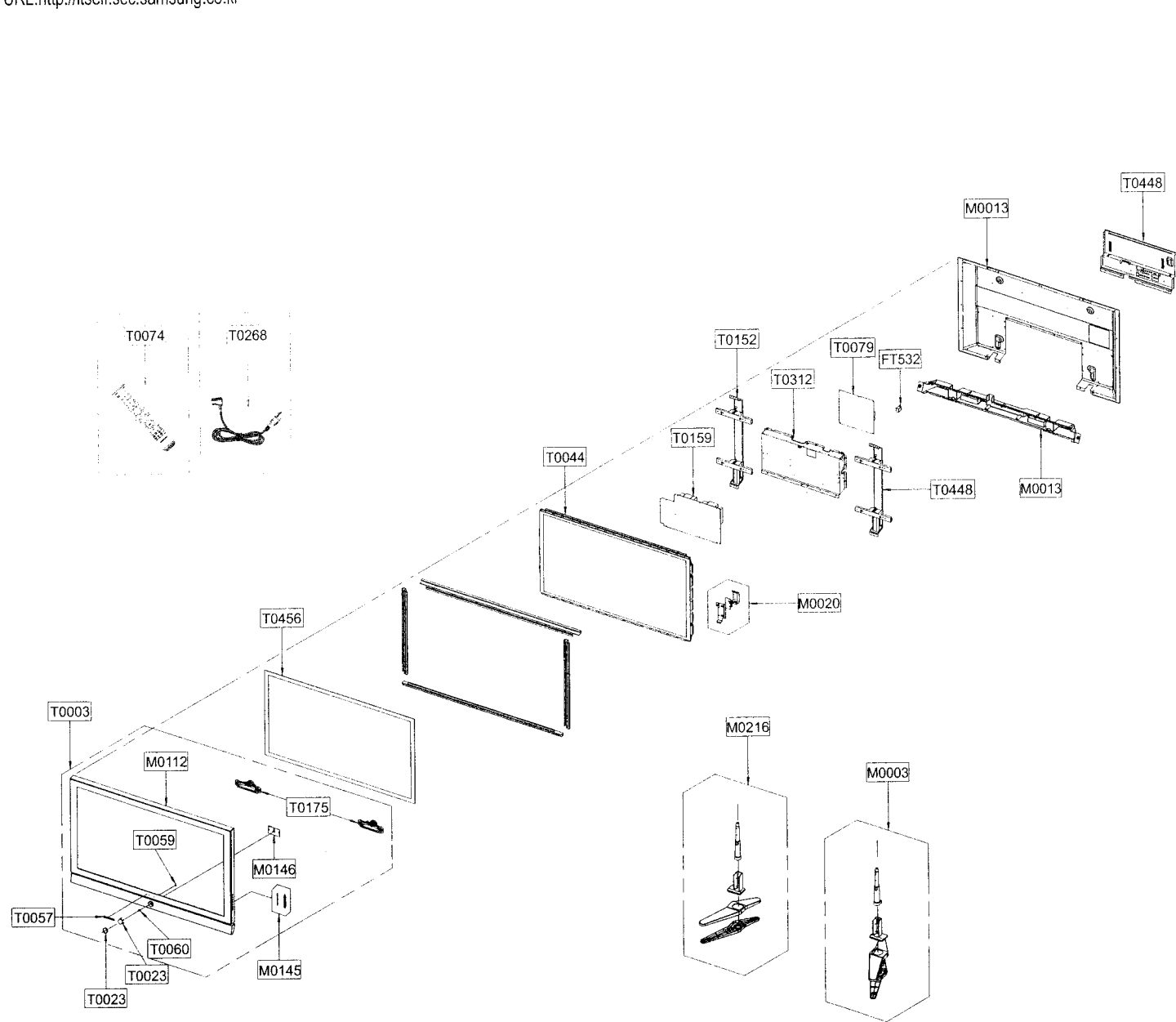


* Use base chassis of PDP panel as GND point.

4. Exploded View & Part List

4-1 PS42E7HX/XEC

You can search for the updated part code through ITSELF web site.
URL:<http://itself.sec.samsung.co.kr>



Loc. No.	Code No.	Description	Specification	Q'ty	SA/SNA	Remark
FT532	2901-001374	FILTER-EMI AC LINE	250V,6A,UL/SA/DE,0.1	1	S.A	
M0003	BN96-02746B	ASSY STAND P-SET RIGHT	42E7,HIPS HB,GRAY	1	S.A	
M0013	BN96-03069A	ASSY COVER P-REAR	42E7,PCM T0.5	1	S.A	
M0013	BN96-03070B	ASSY COVER P-REAR BOTTOM	42E7,HIPS HB,BK	1	S.A	
M0020	BN96-03075A	ASSY BOARD P-SIDE A/V	AUDI,SJ05-01-430,S	1	S.A	
M0112	BN63-02367A	COVER-FRONT	42E7,HIPS,HB,GRAY,BKP1526+SV	1	S.N.A	
M0145	BN96-02784A	ASSY BOARD P-FUNCTION	TWISTER,CT5000-385	1	S.A	
M0146	BN96-02050D	ASSY BOARD P-POWER & IR	Twister,CT5000-3	1	S.A	
M0216	BN96-02747B	ASSY STAND P-SET LEFT	42E7,HIPS HB,GRAY,	1	S.A	
T0003	BN96-03625A	ASSY COVER P-FRONT	42E7H(HQ),XEC,HIPS HB	1	S.A	
T0023	BN64-00419A	KNOB-POWER	42V6,PC,VIOLET	1	S.N.A	
T0023	BN64-00421A	KNOB POWER	42V6,DECO,ABS,HB,BLK(BK500),C	1	S.N.A	
T0044	BN96-03288A	ASSY PDP MODULE P	M1,42HD,V5.1,1024*768,	1	S.A	
T0057	BP64-00177A	BADGE-BRAND	ALL,AL,T1.5,70,11.3,BLK,SILI	1	S.A	
T0059	BN64-00366A	INDICATOR LED	ROME-I,PC,CLEAR,ALL MODEL	1	S.N.A	
T0060	BN61-02184A	SPRING ETC	SUS304,OD11.2,L30,N7	1	S.A	
T0074	BN59-00531A	REMOCON	AUDI,TM86,SAMSUNG,45Key,31mArms,	1	S.A	
T0079	BN94-00837A	ASSY PCB MISC-MAIN	PS-42E7H,EU,D74A,AUDI	1	S.A	
T0152	BN96-01774A	ASSY BRACKET P-WALL RIGHT	SPD-42P5HD,SEC	1	S.A	
T0159	BN96-03052A	ASSY PCB P-SMPS	PS42E7H,100-240V,245*370	1	S.A	
T0175	BN96-02785A	ASSY SPEAKER P	8ohm,Twister,42inch,10W	1	S.A	
T0268	3903-000145	CBF-POWER CORD	DT,EU,FP3/YES,U(IEC C13-R	1	S.A	
T0312	BN96-03067E	ASSY COVER P-REAR SUB	42E7(HD),AUDI,SECC,T1.0	1	S.N.A	
T0448	BN96-01775A	ASSY BRACKET P-WALL LEFT	SPD-42P5HD,SECC	1	S.A	
T0448	BN96-03068A	ASSY BRACKET P-TERMINAL	42E7,XEC,PCM T0.	1	S.N.A	
T0456	BN67-00157A	GLASS-FILTER EMI	42 D5,Mesh,44%,984*584,	1	S.A	

5. Electrical Part List

5-1 PS42E7HX/XEC Service Item

You can search for the updated part code through ITSELF web site.

URL: <http://itself.sec.samsung.co.kr>

Loc. No.	Code No.	Description	Specification	Q'ty	SA/SNA	Remark
M0003	BN96-02746B	ASSY STAND P-SET RIGHT	42E7,HIPS HB,GRAY	1	S.A	
M0013	BN96-03069A	ASSY COVER P-REAR	42E7,PCM T0.5	1	S.A	
M0013	BN96-03070B	ASSY COVER P-REAR BOTTOM	42E7,HIPS HB,BK	1	S.A	
M0018	BN97-00748A	ASSY MICOM	T-AUD42PEUH-1011,PS-42E7H,D74	1	S.A	
M0018	BN97-00857A	ASSY MICOM	T-AUDMPEUS-1001,PS42E7,D74A,S	1	S.A	
M0216	BN96-02747B	ASSY STAND P-SET LEFT	42E7,HIPS HB,GRAY,	1	S.A	
M2893	BN39-00632B	LEAD CONNECTOR	PS-42E7HX/XEC,UL1617#22,U	1	S.A	
M2893	BN39-00667D	LEAD CONNECTOR	AUDI,UL20276#30,31PIN,250	1	S.A	
M2893	BN39-00675A	LEAD CONNECTOR	PUCCINI,UL1007#26,10PIN,1	1	S.A	
M2893	BN39-00676A	LEAD CONNECTOR	PUCCINI,UL1007#26,12PIN,1	1	S.A	
T0003	BN96-03625A	ASSY COVER P-FRONT	42E7H(HQ),XEC,HIPS HB	1	S.A	
T0044	BN96-03288A	ASSY PDP MODULE P	M1,42HD,V5.1,1024*768,	1	S.A	
T0074	BN59-00531A	REMOCON	AUDI,TM86,SAMSUNG,45Key,31mArms,	1	S.A	
T0079	BN94-00837A	ASSY PCB MISC-MAIN	PS-42E7H,EU,D74A,AUDI	1	S.A	
T0159	BN96-01856A	ASSY PCB P-SMPS	SPD-50P5HD(DC_DC),200Vin	1	S.A	
T0159	BN96-03052A	ASSY PCB P-SMPS	PS42E7H,100~240V,245*370	1	S.A	
T0175	BN96-02785A	ASSY SPEAKER P	8ohm,Twister,42inch,10W	1	S.A	
T1910	BN96-03350A	ASSY PDP MODULE P-X MAIN BOARD	42HD,PL42	1	S.A	
T1911	BN96-03351A	ASSY PDP MODULE P-Y MAIN BOARD	42HD,PL42	1	S.A	
T1914	BN96-03353A	ASSY PDP MODULE P-ADDRESS E BU	42HD,PL42	1	S.A	
T1915	BN96-03354A	ASSY PDP MODULE P-ADDRESS F BU	42HD,PL42	1	S.A	
T1917	BN96-03355A	ASSY PDP MODULE P-LOGIC MAIN B	42HD,PL42	1	S.A	
T9698	BN96-03352A	ASSY PDP MODULE P-Y MAIN SCAN	42HD,PL42A	1	S.A	

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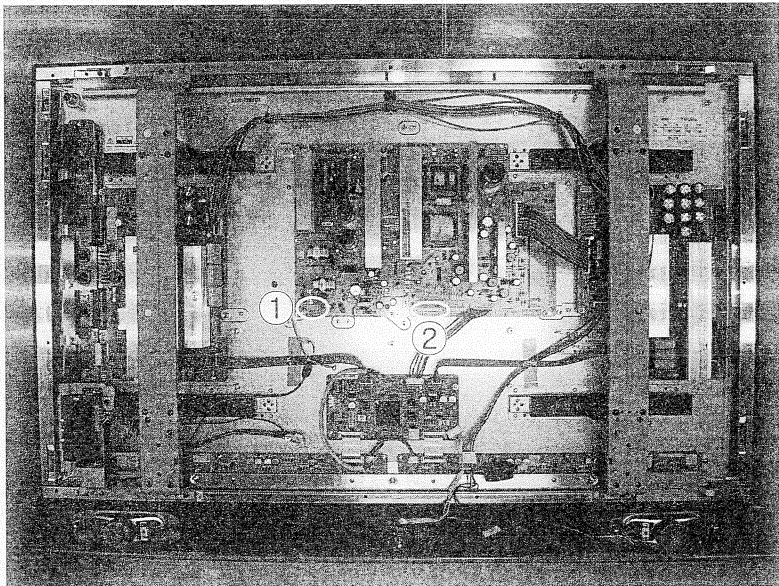
6. Troubleshooting

6-1 First Checklist for Troubleshooting

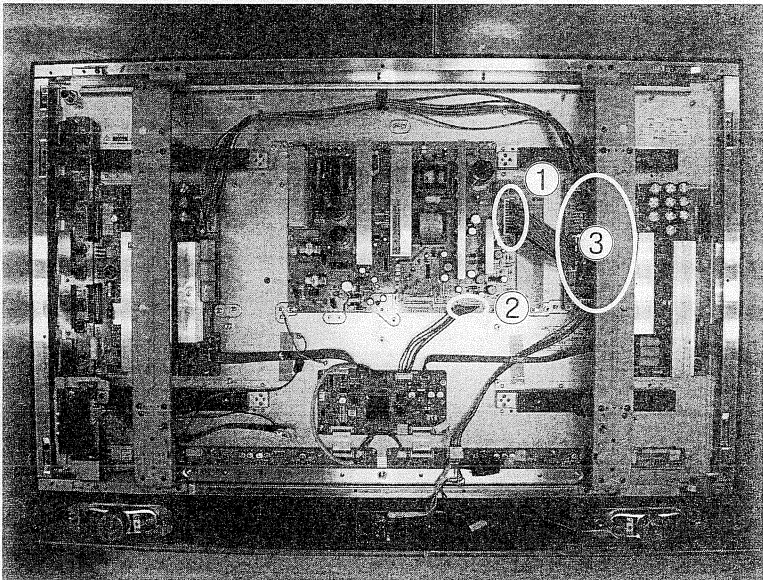
1. Check the various cable connections first.
 - Check to see if there is a burnt or damaged cable.
 - Check to see if there is a disconnected cable connection or a connection is too loose.
 - Check to see if the cables are connected according to the connection diagram.
2. Check the power input to the Main Board.
3. Check the voltage in and out between the SMPS ↔ Main Board, between the SMPS ↔ X, Y Main Board, and between the Logic Boards.

6-2 Checkpoints by Error Mode

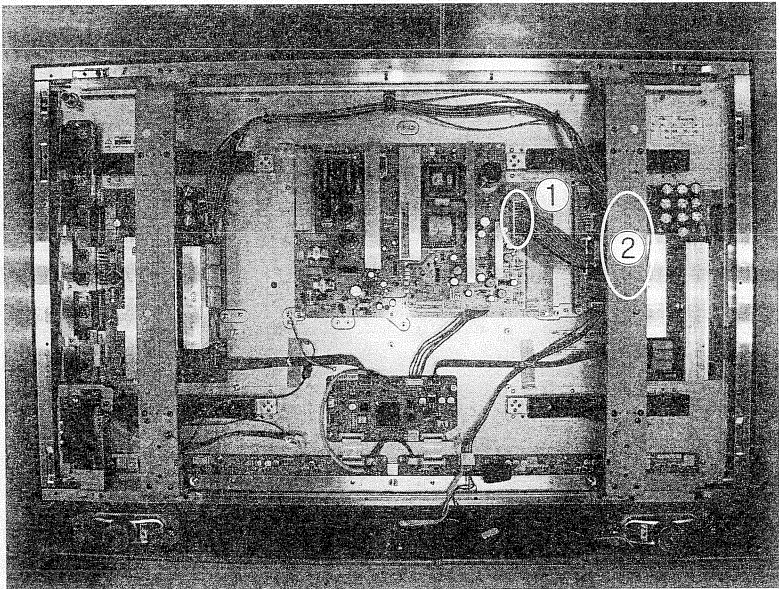
6-2-1 No Power

Symptom	<ul style="list-style-type: none"> - The LEDs on the front panel do not work when connecting the power cord. - The SMPS relay does not work when connecting the power cord. - The power of the unit seems to be out of order.
Major Checklist	<p>The SMPS relay or the LEDs on the front panel do not work when connecting the power cord if the cables are improperly connected or the Main Board or SMPS is out of order. In this case, check the following:</p> <ul style="list-style-type: none"> - Check the internal cable connection status inside the unit. - Check the fuses of each part. - Check the output voltage of SMPS. - Replace the Main Board.
Troubleshooting Procedures	 <pre> graph TD Q1[1 Are the AC IN socket connector and the Main SMPS CN800 connected?] -- No --> A1([The AC IN socket connector and the Main SMPS CN800 connected]) Q1 -- Yes --> Q2[1 Is the Fuse (F801S) of the Main SMPS Power Input Part blown?] Q2 -- No --> A2([Replace Fuse (F801S)]) Q2 -- Yes --> Q3[2 Main SMPS CN804-1 Pin 3 : STB 5V Pin 8 PS-ON : Check to see if it is 0V] Q3 -- No --> A3([Replace the Main SMPS]) Q3 -- Yes --> A4[Replace the Main Board] </pre>

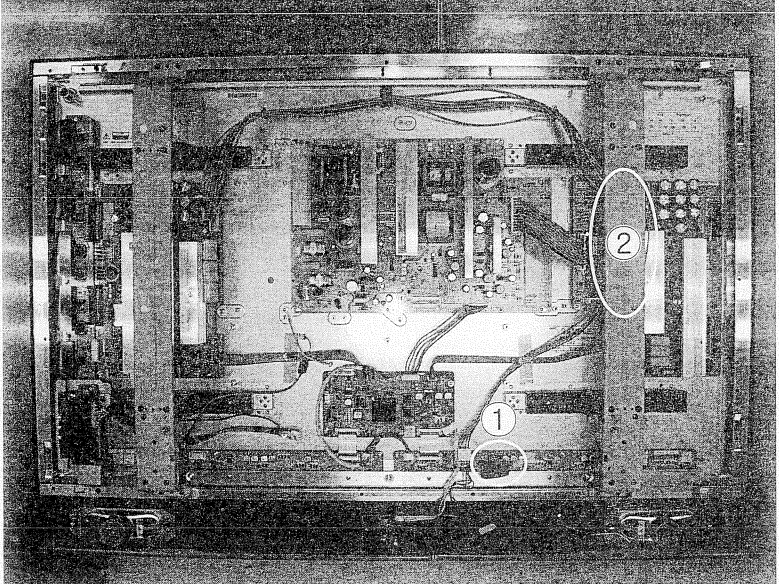
6-2-2 When the unit is repeatedly turned on and off

Symptom	- The SMPS relay is repeatedly turned on and off.
Major Checklist	<p>In general, the SMPS relay repeatedly turns on and off by the protection function due to a defect on a board connected to the SMPS.</p> <ul style="list-style-type: none"> - Disconnect all cables from the SMPS, operate the SMPS alone and check if the SMPS works properly and if each voltage output is correct. - If the symptom continues even when SMPS is operated alone, replace the SMPS. - If the symptom is not observed when operating the SMPS alone, find any defective ASSYs by connecting the cables one by one.
Troubleshooting Procedures	 <pre> graph TD Q1["① Does the symptom continue after connecting the power and removing the CN809 cable from the Main SMPS?"] Q2["② Does the symptom continue after connecting the power and removing the CN804-2 cable from the Main SMPS?"] Q3a["③ Does the symptom continue when connecting the power after connecting the CN809 cable and removing the CN1, CN2, CN4 and CN6 cables from the DC-DC SMPS?"] Q3b["③ Does the symptom continue when connecting the power after removing the CN4 cable from the DC-DC SMPS?"] Q3c["③ Does the symptom continue when connecting the power after removing CN2 from the DC-DC SMPS?"] Q2b["② Does the symptom continue when connecting the power after removing CN810 from the Main SMPS?"] R1["Replace the Main SMPS"] R2["Replace the DC-DC SMPS"] R3a["Replace the X Main Board"] R3b["Replace the Y Main Board"] R4["Replace the Logic Board"] Q1 -- Yes --> Q2 Q1 -- No --> Q3a Q2 -- Yes --> R1 Q2 -- No --> Q3a Q3a --> R2 Q3b --> R3a Q3c --> R3b Q2b --> R4 </pre>
Caution	When separating and connecting the cables such as CN809 of the Main SMPS, CN1, CN2, CN3, CN4 and CN5 of DC-DC SMPS, CN of the X Main Board, and CN of the Y Main Board, a spark may be generated by the electric charge of the high capacity capacitor. Therefore, wait some time after separating the power cord from the unit.

6-2-3 No Picture (When audio is normal)

Symptom	- Audio is normal but no picture is displayed on the screen.
Major Checklist	<ul style="list-style-type: none"> - This may happen when the Main Board is normal but the X, Y Main Board, Logic Board, or Y Buffer Board is out of order. - The output voltage of the Main SMPS or the DC-DC SMPS is out of order. - This may happen when the LVDS cable connecting the Main Board and the Logic Board is disconnected.
Troubleshooting Procedures	 <pre> graph TD Q1["① Are the Vs and Va voltages normal after removing the CN809 cable from the Main SMPS?"] Q2["② Is the output voltage of the DC-DC SMPS normal when reconnecting the CN809 cable and removing the CN1, CN2, CN4 and CN6 cables from the DC-DC SMPS?"] R1["Replace the Main SMPS"] R2["Replace the DC-DC SMPS"] R3["Replace the Y Main Board"] R4["Replace the X Main Board"] R5["Replace the Logic Board"] R6["Replace the Y Scan Board"] Q1 -- No --> R1 Q1 -- Yes --> Q2 Q2 -- No --> R2 Q2 -- Yes --> R3 R3 --> R4 R4 --> R5 R5 --> R6 </pre>
Caution	When separating and connecting the cables such as CN809 of the Main SMPS, CN1, CN2, CN3, CN4 and CN5 of the DC-DC SMPS, CN of the X Main Board, and CN of the Y Main Board, a spark may be generated by the electric charge of the high capacity capacitor. Therefore, wait some time after separating the power cord from the unit.

6-2-4 No Sound

Symptom	- Video is normal but there is no sound.
Major Checklist	<ul style="list-style-type: none"> - When the speaker connectors are disconnected or damaged. - When the sound processing part of the Main Board is out of order. - Speaker defect. - When setting the volume to 0 (Nonsense).
Troubleshooting Procedures	 <pre> graph TD Q1["① Is the cable connection between the Main Board and the speaker properly connected?"] Q2["② Is the speaker output terminal of the Main Board normal?"] A1["Connect the cable properly or replace the cable, if necessary."] A2["Replace the DC-DC SMPS"] A3["Replace the Y Drive Board"] A4["Replace the X Drive Board"] A5["Replace the Logic Board"] A6["Replace the Y Scan Board"] Q1 -- No --> A1 Q1 -- Yes --> Q2 Q2 -- No --> A2 Q2 -- Yes --> A3 A3 --> A4 A4 --> A5 A5 --> A6 </pre>

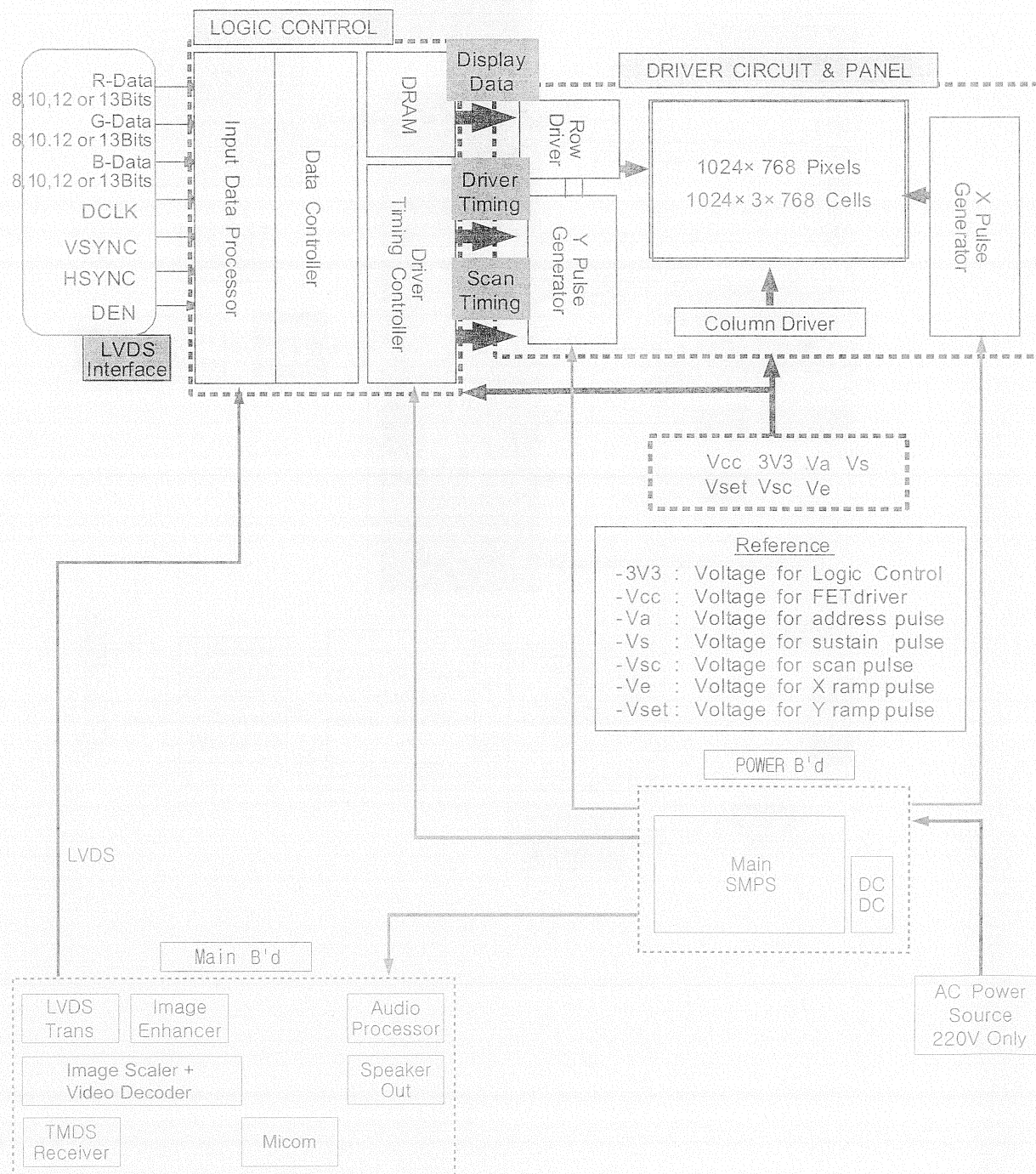
6-3 Troubleshooting Procedures by ASS'Y

※ The ASS'Y code can be changed, see "5 Chapter. Electrical Part List."

No	Assy	Code No.	Description	Major Symptoms
1	ASSY PCB P-SMPS	BN96-03052A	Main SMPS	No power, Blank screen, the Relay repeats On and Off.
2	ASSY PCB P-SMPS	BN96-01856A	DC-DC SMPS	Blank screen, the Relay repeats On and Off.
3	ASSY PDP P-X MAIN BOARD	BN96-03350A	X Main Board	Blank screen
4	ASSY PDP P-Y MAIN BOARD	BN96-03351A	Y Main Board	Blank screen
5	ASSY PDP MODUEL P-LOGIC MAIN BOARD	BN96-03355A	Logic Board	Blank screen, Screen noise
6	ASSY PDP P-Y SCAN BOARD	BN96-03352A	Y Scan Board	Row Bar screen is blank
7	ASSY PDP P-ADDRESS E-BUFF BOARD	BN96-03353A	Address E Buffer Board	Corresponding Buffer Board block screen is blank.
8	ASSY PDP P-ADDRESS F-BUFF BOARD	BN96-03354A	Address F Buffer Board	Corresponding Buffer Board block screen is blank.
9	ASSY PCB MISC-MAIN	BN94-00837A	Main Board	No Power, Abnormal screen for each input source, PIP screen trouble, Sound trouble
10	ASSY BOARD P-FUNCTION	BN96-02784A	Function Key Board	The side function key does not work properly
11	ASSY BOARD P-POWER&IR	BN96-02050D	Power Button Board	The remote control does not work properly, the LED does not work properly.
12	ASSY BOARD P-SIDE AV	BN96-03075A	Side AV Board	The AV2 and S-VIDEO2 modes do not work properly

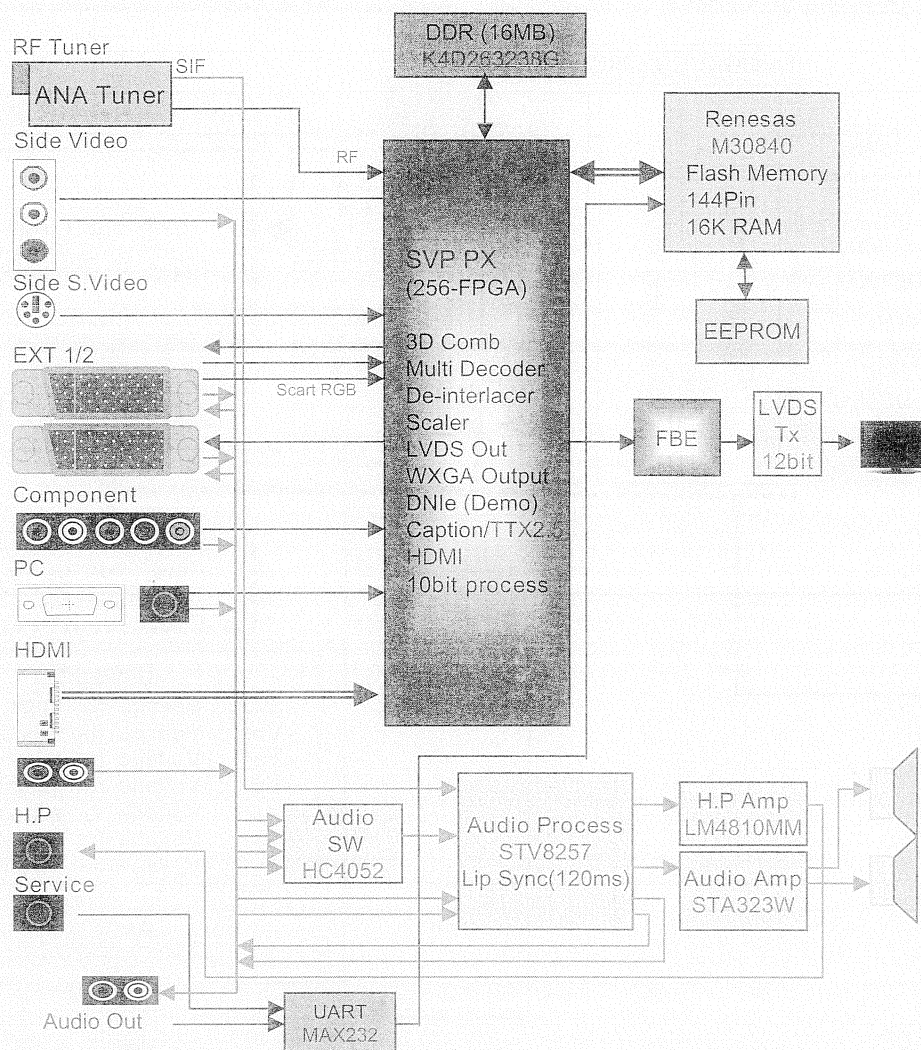
7. Block Diagram

7-1 Overall Block Diagram

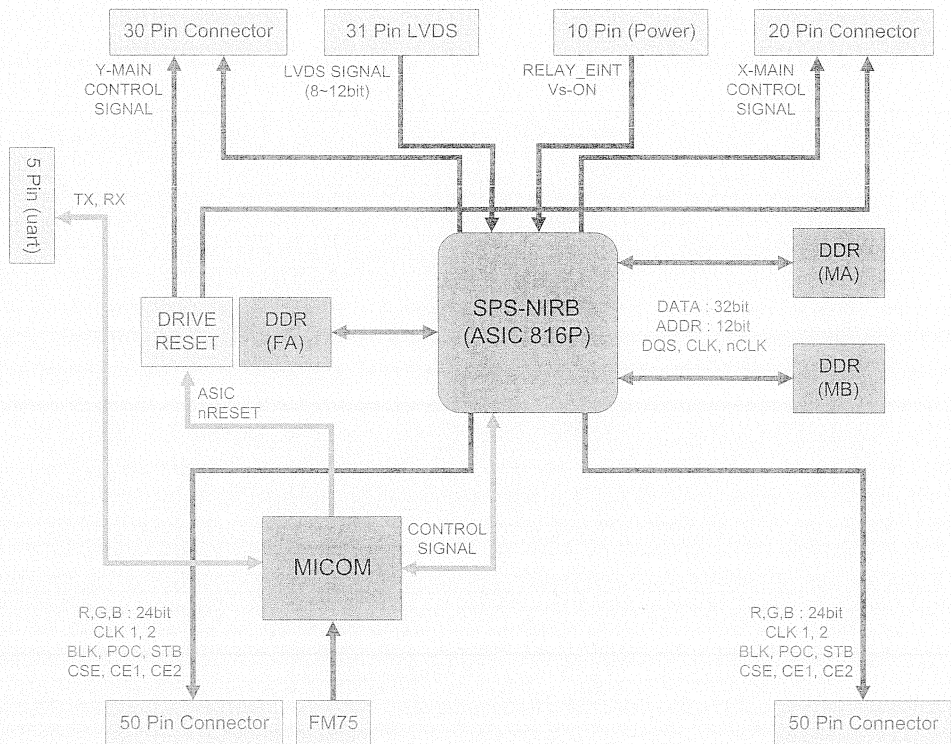


7-2 Partial Block Diagram

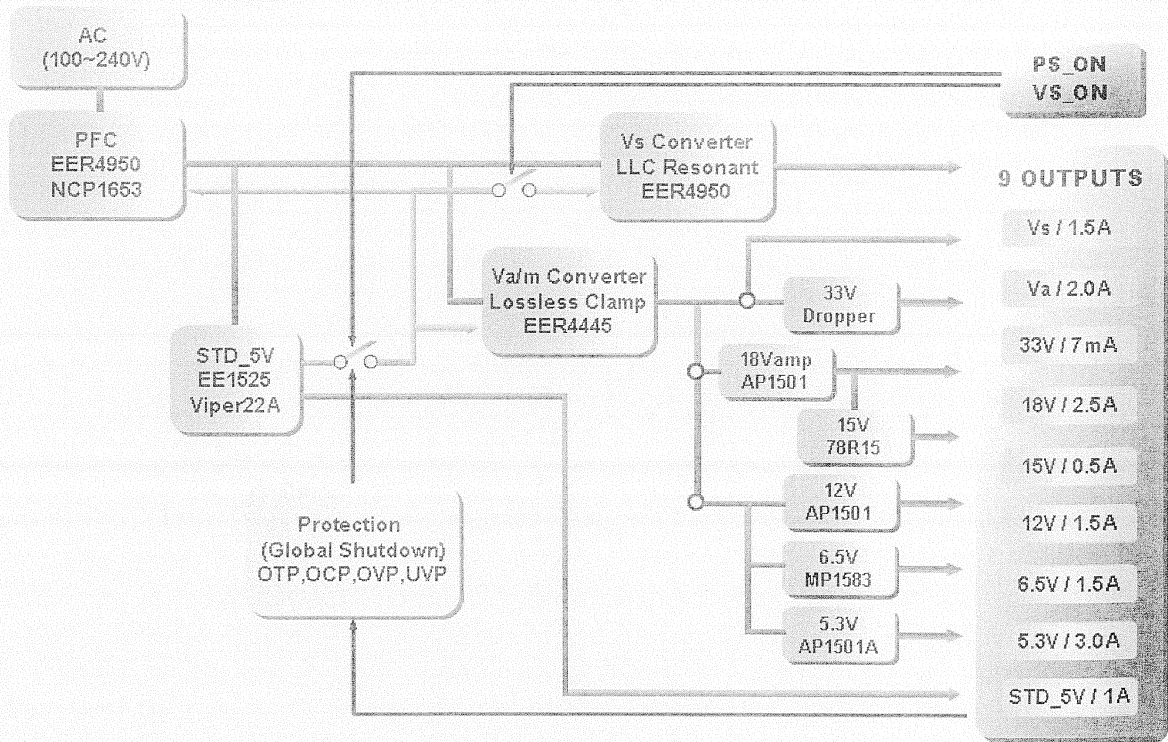
7-2-1 Audio/Video Signal Block Diagram



7-2-2 Logic Board Block Diagram



7-2-3 Powe Block Diagram

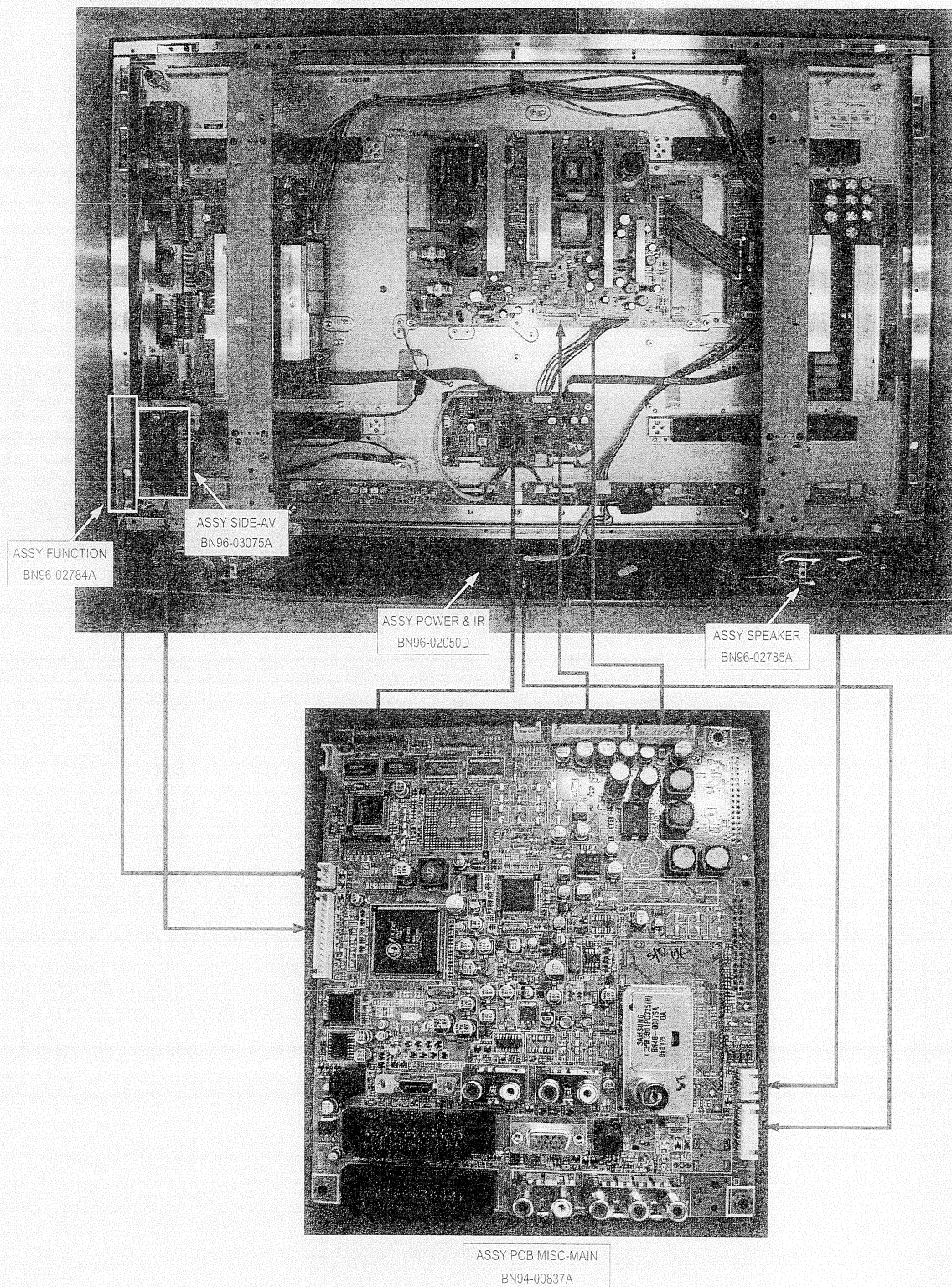


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8. Wiring Diagram

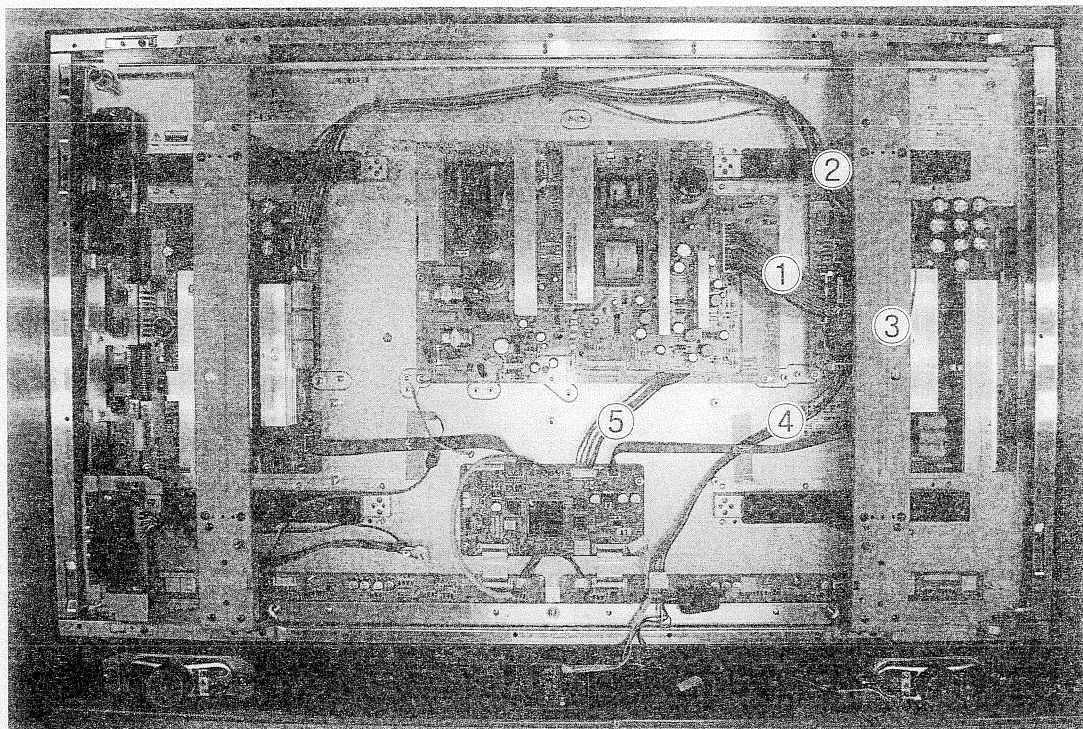
8-1 Overall Wiring

※ The ASSY code can be changed, see "5 Chapter. Electrical Part List."



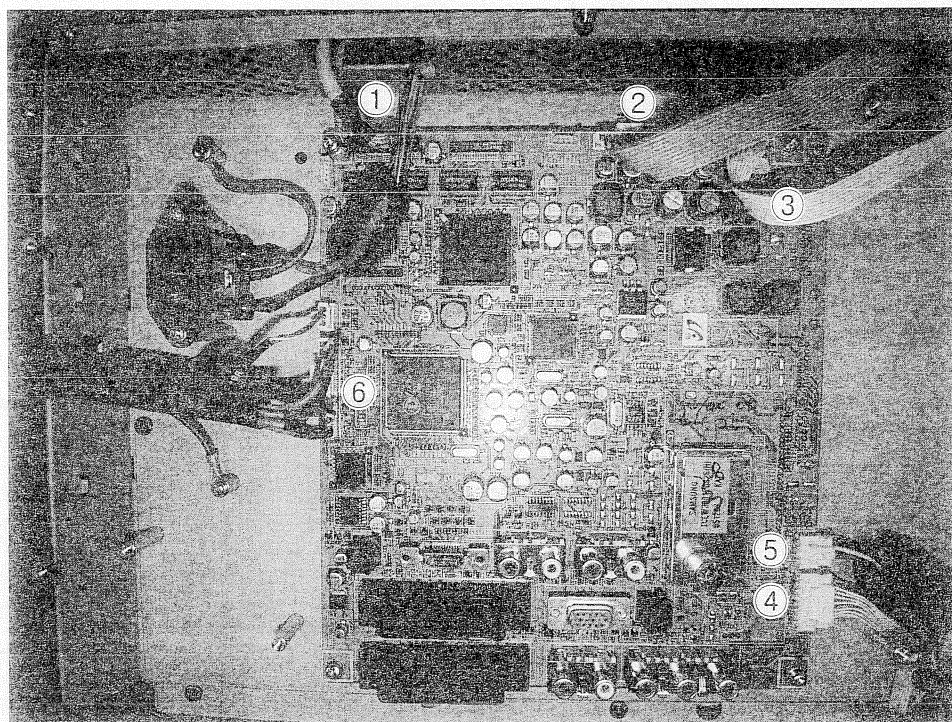
8-2 Partial Wiring

8-2-1 PDP Module ↔ SMPS Wiring



① CN809(Main SMPS) ↔ CN3(DC-DC SMPS)		② CN2(DC-DC SMPS) ↔ CN5007(Y B'D)		③ CN4(DC-DC SMPS) ↔ CN4001(X B'D)		④ CN6(DC-DC SMPS) ↔ CN2509(E-Buffer)		⑤ CN810(Main SMPS) ↔ CN2013(Logic B'D)	
Pin No.	Signal	Pin No.	Signal	Pin No.	Signal	Pin No.	Signal	Pin No.	Signal
1	D5.3V	1	Vs	1	D5.3V	1	RTN	1	STD_5V
2	Vg	2	Vs	2	Vg	2	N.C	2	VS_ON
3	RTN	3	RTN	3	RTN	3	D5.3V	3	N/C
4	RTN	4	RTN	4	RTN	4	N/C	4	PS_ON
5	RTN	5	Vset	5	Ve	5	Va	5	RTN
6	RTN	6	RTN	6	RTN			6	D5.3V
7	RTN	7	Vscan	7	RTN			7	RTN
8	Va	8	RTN	8	Vs			8	RTN
9	Va	9	Vg	9	Vs			9	D5.3V
10	N/C	10	D5.3V					10	D5.3V
11	Vs								
12	Vs								

8-2-2 Main Board ↔ SMPS, Power&IR, Function Board, Speaker Out Wiring



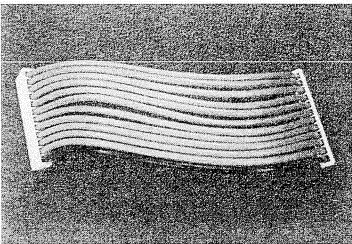
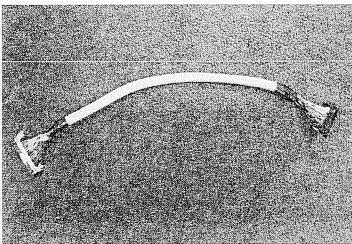
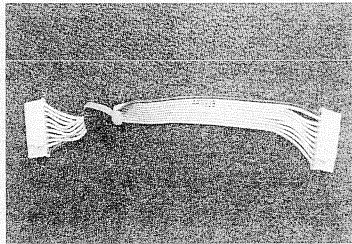
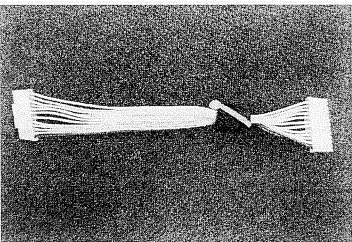
① CN2013(Logic B'd) ↔ CN902(Main Board)						② CN804-1(Main SMPS) ↔ CN102(Main Board)		③ CN803(Main SMPS) ↔ CN101(Main Board)	
Pin No.	Signal	Pin No.	Signal	Pin No.	Signal	Pin No.	Signal	Pin No.	Signal
1	GND	12	TXOUT2+	23	TXOUT0B-	1	5.3V	1	6.5V
2	GND	13	GND	24	TXOUT0B+	2	RTN	2	RTN
3	TXOUT-	14	GND	25		3	N/C	3	12V
4	TXOUT+	15	TXOUTCLK-	26	GND	4	N/C	4	RTN
5	GND	16	TXCLKOUT+	27	SCL_G	5	RTN	5	18Vamp
6	GND	17		28	GND	6	RTN	6	18Vamp
7	TXOUT-	18		29	SDA_G	7	12V	7	RTN_amp
8	TXOUT+	19	TXOUT3-	30	GND	8	PS_ON	8	RTN_amp
9		20	TXOUT3+	31		9	RTN	9	Vt
10		21		32	GND	10	STBY	10	RTN
11	TXOUT2-	22		33	GND	11	FAN_ON		
						12	FAN_D		

Wiring Diagram

④ CN740(Main Board) ↔ CN001(Power Button)		⑤ CN501(Main Board) ↔ Speaker Out		⑥ CN741(Main Board) ↔ CN1(Function Board)	
Pin No.	Signal	Pin No.	Signal	Pin No.	Signal
1	GND	1	SPK_R+	1	KEY_INPUT1
2	LED	2	SPK_R-	2	KEY_INPUT2
3	ST5V	3	SPK_L+	3	GND
4	GND	4	SPK_L-		
5	KEY_INPUT2				
6					
7					
8	IR_7414				

8-2-3 Connect Cables

※ The code number of cable(Lead-connector) can be changed, see "5 Chapter. Electrical Part List."

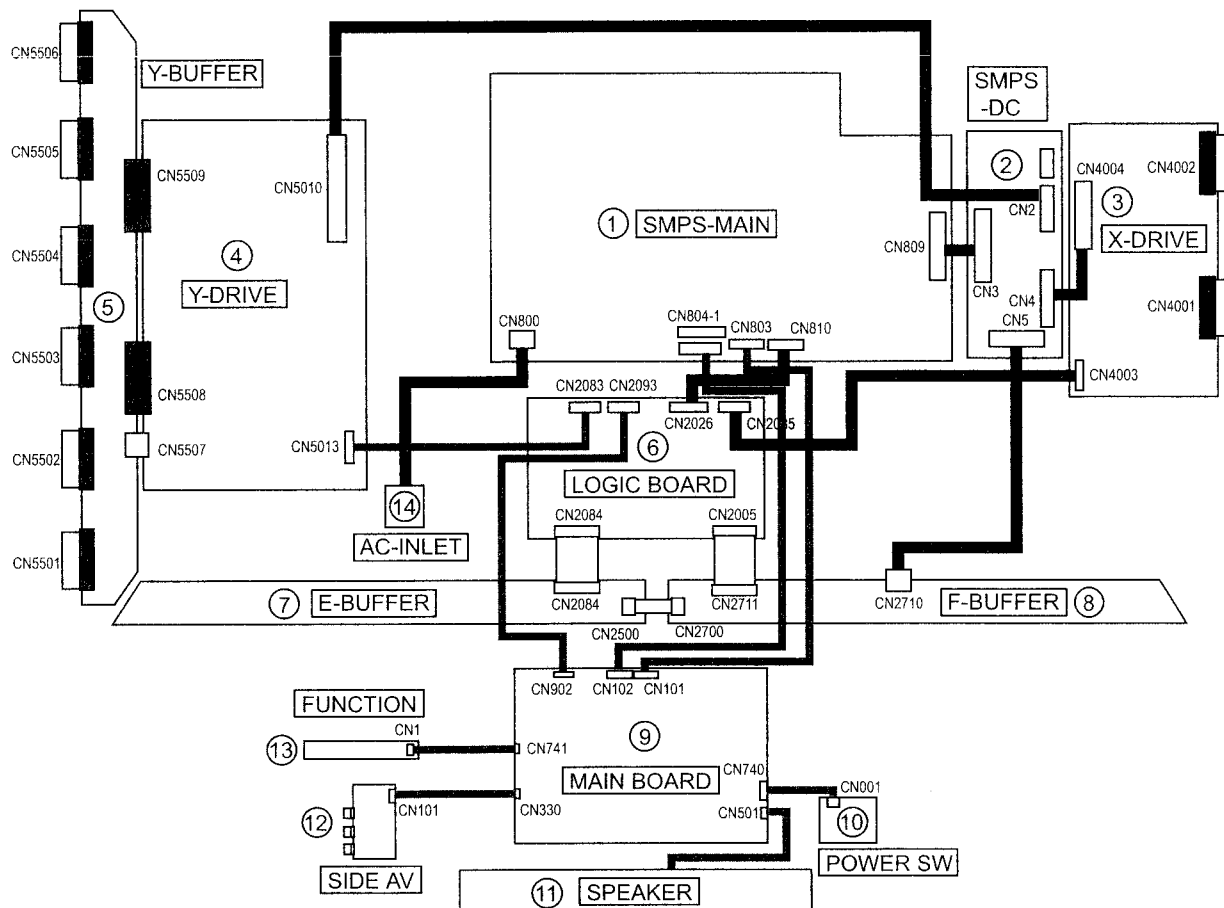
Use	SMPS 12P	LVDS 31P	POWER 10P
Code	BN39-00632B	BN39-00667D	BN39-00675A
Photo			
Use	POWER 12P		
Code	BN39-00676A		
Photo			

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9. PCB Diagram

9-1 Overall PCB Diagram

※ The ASS'Y code can be changed, see "5 Chapter. Electrical Part List."



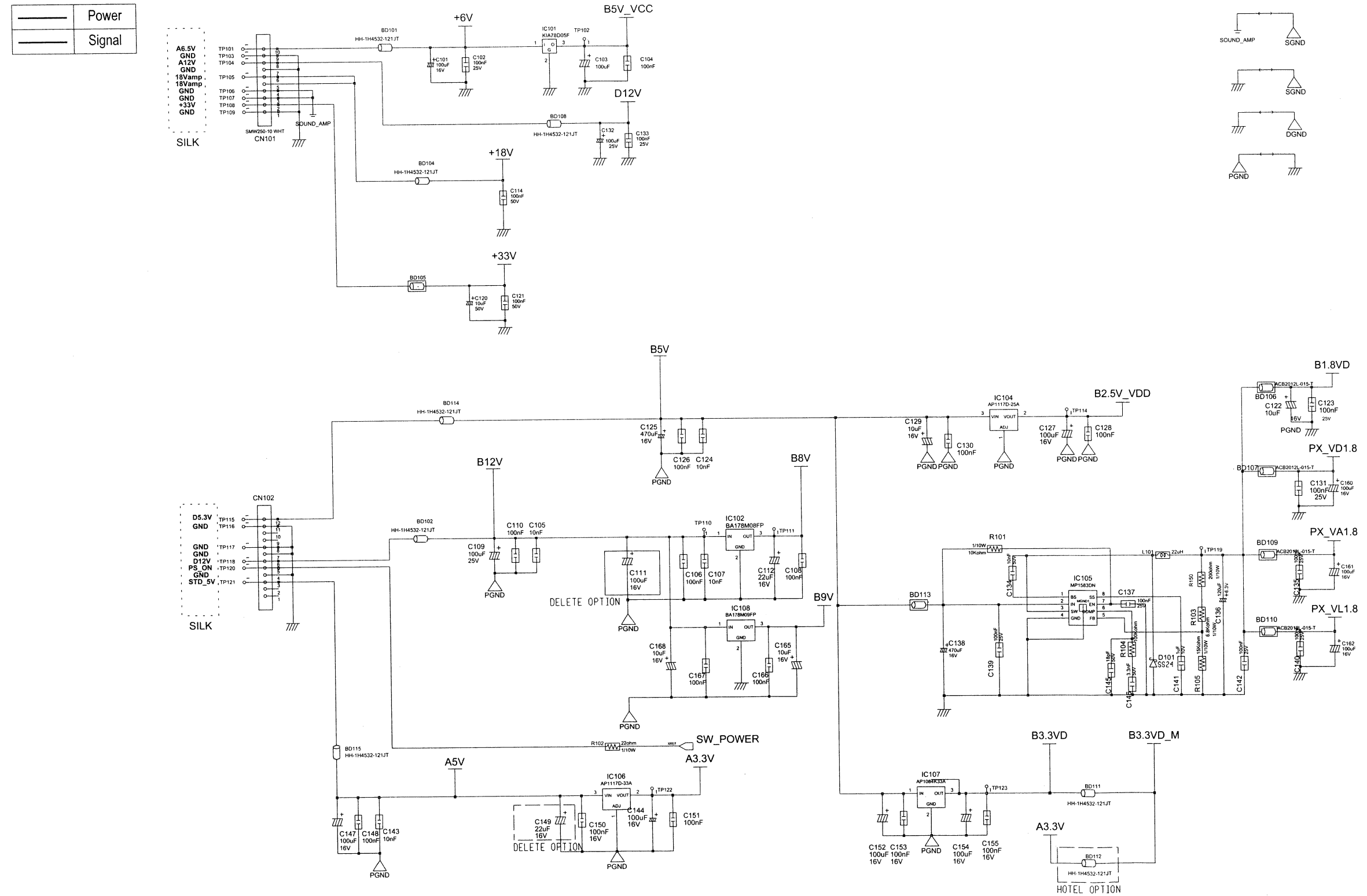
No	Assy	Code No.	Description
—	ASSY PDP MODULE P	BN96-03288A	M1,42HD,V5.1,1024*768,NTSC/PAL,complementary color,with logic
①	ASSY PCB P-SMPS	BN96-03052A	PS42E7H,100~240V,245*370mm
②	ASSY PCB P-SMPS	BN96-01856A	SPD-50P5HD(DC_DC),200Vin(DC_DC)
③	ASSY PDP MODULE P-X MAIN BOARD	BN96-03550A	42HD,PL42AX005A,V5.1,NTSC/PAL,1024*768,LJ92-01345A
④	ASSY PDP MODULE P-Y MAIN BOARD	BN96-03351A	42HD,PL42AX005A,V5.1,NTSC/PAL,1024*768,LJ92-01346A
⑤	ASSY PDP MODULE P-Y MAIN SCAN BUFFER	BN96-03352A	42HD,PL42AX005A,V5.1,NTSC/PAL,1024*768,LJ92-01344A
⑥	ASSY PDP MODULE P-LOGIC MAIN BOARD	BN96-03355A	42HD,PL42AX005A,V5.1,NTSC/PAL,1024*768,sec/sesk,
⑦	ASSY PDP P-ADDRESS E BUFFER	BN96-03353A	42HD,PL42AX005A,V5.1,NTSC/PAL,1024*768,LJ92-01343A
⑧	ASSY PDP P-ADDRESS F BUFFER	BN96-03354A	42HD,PL42AX005A,V5.1,NTSC/PAL,1024*768,LJ92-01342A
⑨	ASSY PCB MISC-MAIN	BN94-00837A	PS-42E7H,EU,D74A,AUDI
⑩	ASSY BOARD P-POWER&IR	BN96-02050D	Twister,CT5000-3530A,POWER & IR,Core,No LED Holder
⑪	ASSY SPEAKER P	BN96-02785A	8ohm,Twister,42inch,10W
⑫	ASSY BOARD P-SIDE AV	BN96-03075A	AUDI,SJ05-01-430,Side A/V,42E7, With Bracket Shield
⑬	ASSY BOARD P-FUNCTION	BN96-02784A	TWISTER,CT5000-3850A,FUNCTION,42V6,With Knob
⑭	FILTER-EMI AC LINE	2901-001374	250V,6A,UL/SA/VDE,0.15uF/1000pF,50x22.5x37.2mm,BK,AE

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10. Schematic Diagram

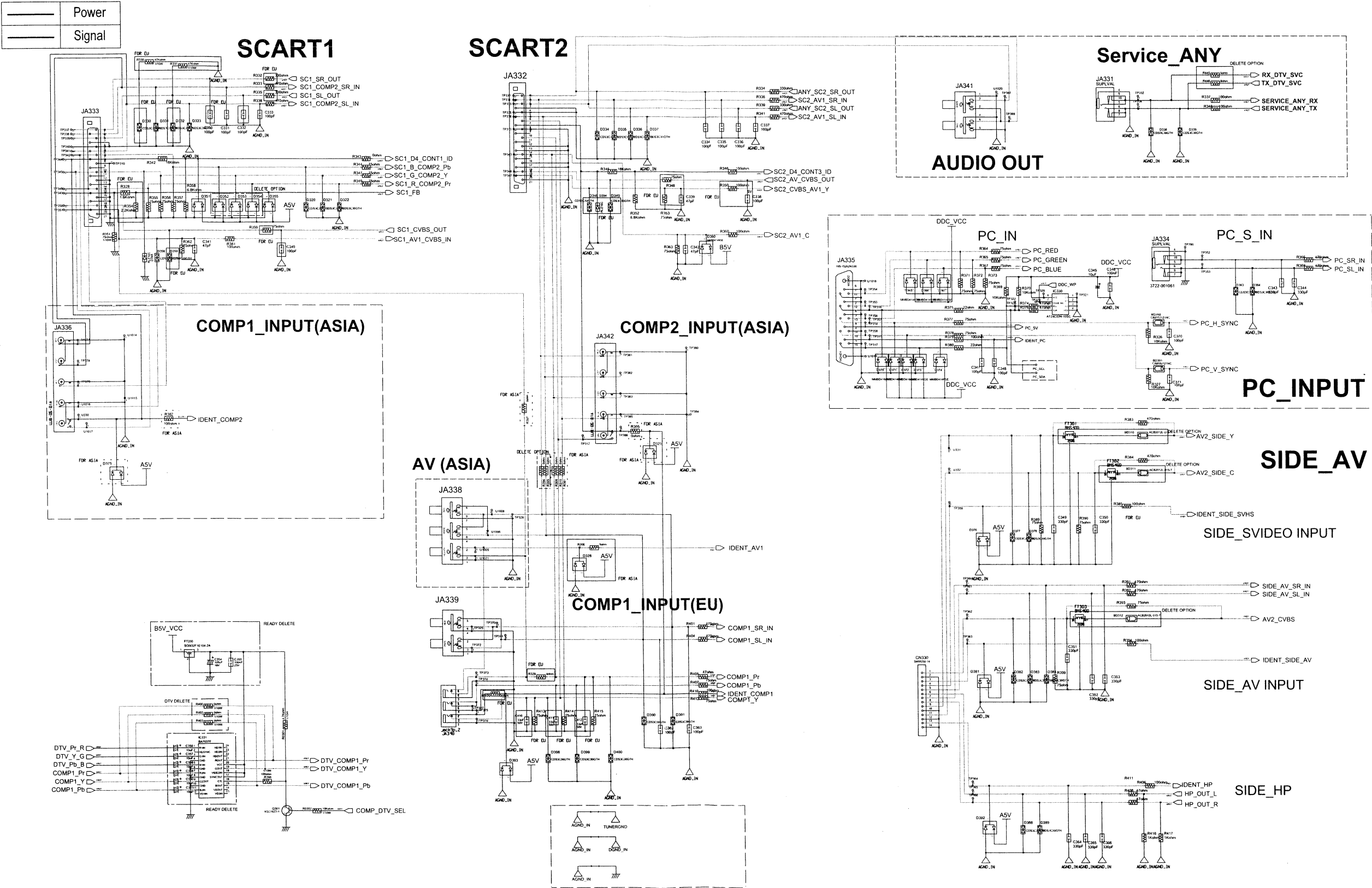
10-1 POWER

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10-2 IN_OUT_JACK

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_____	Power
_____	Signal

SOUND

SOUND

B8V

B5V_VCC

B3.3VD

B1.8VD

B5V_VCC

POP NOISE SOLUTION



DELETE OPTION

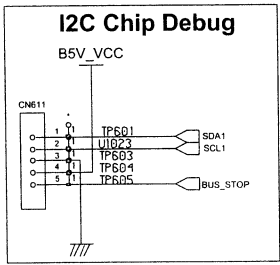
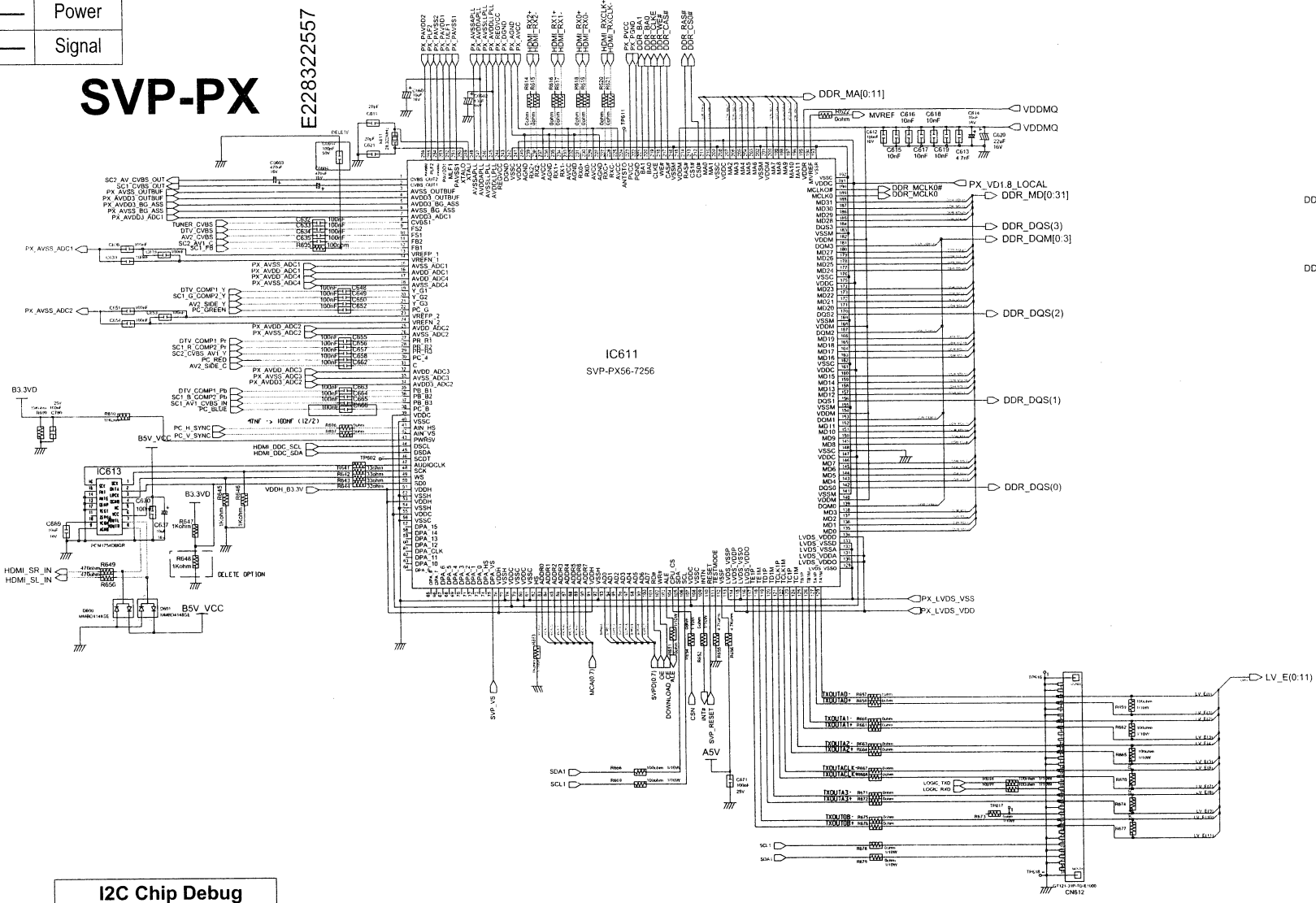
STV8257(PAL) : B0511 DELETE

SOUND AMP

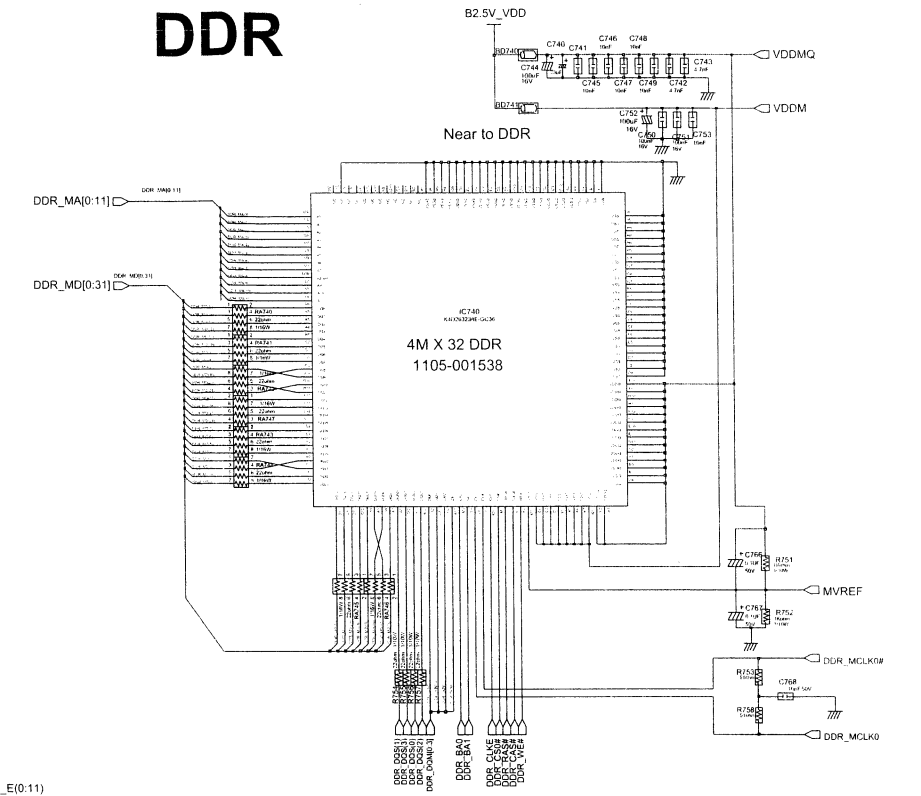
10-5 SVP_PX

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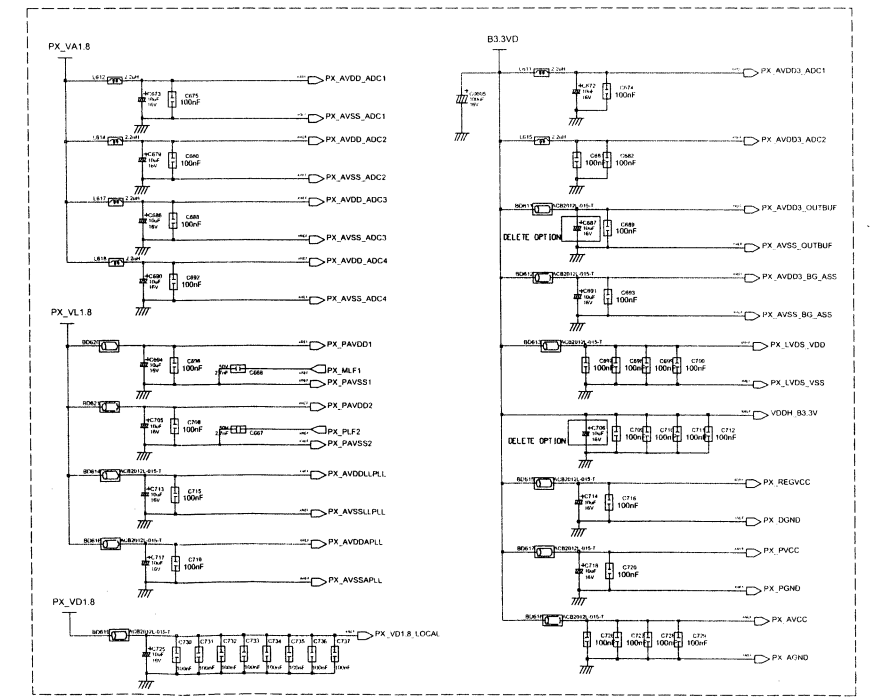
	Power
	Signal



DDR

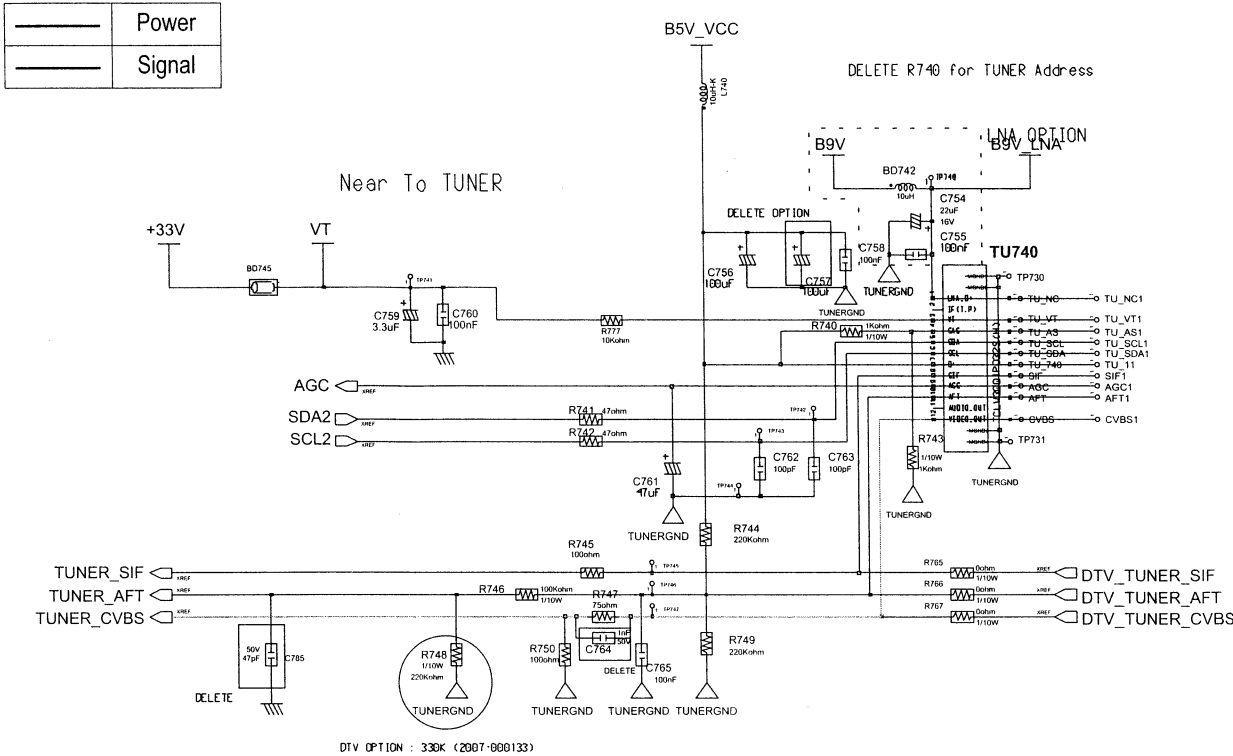


PX_Power



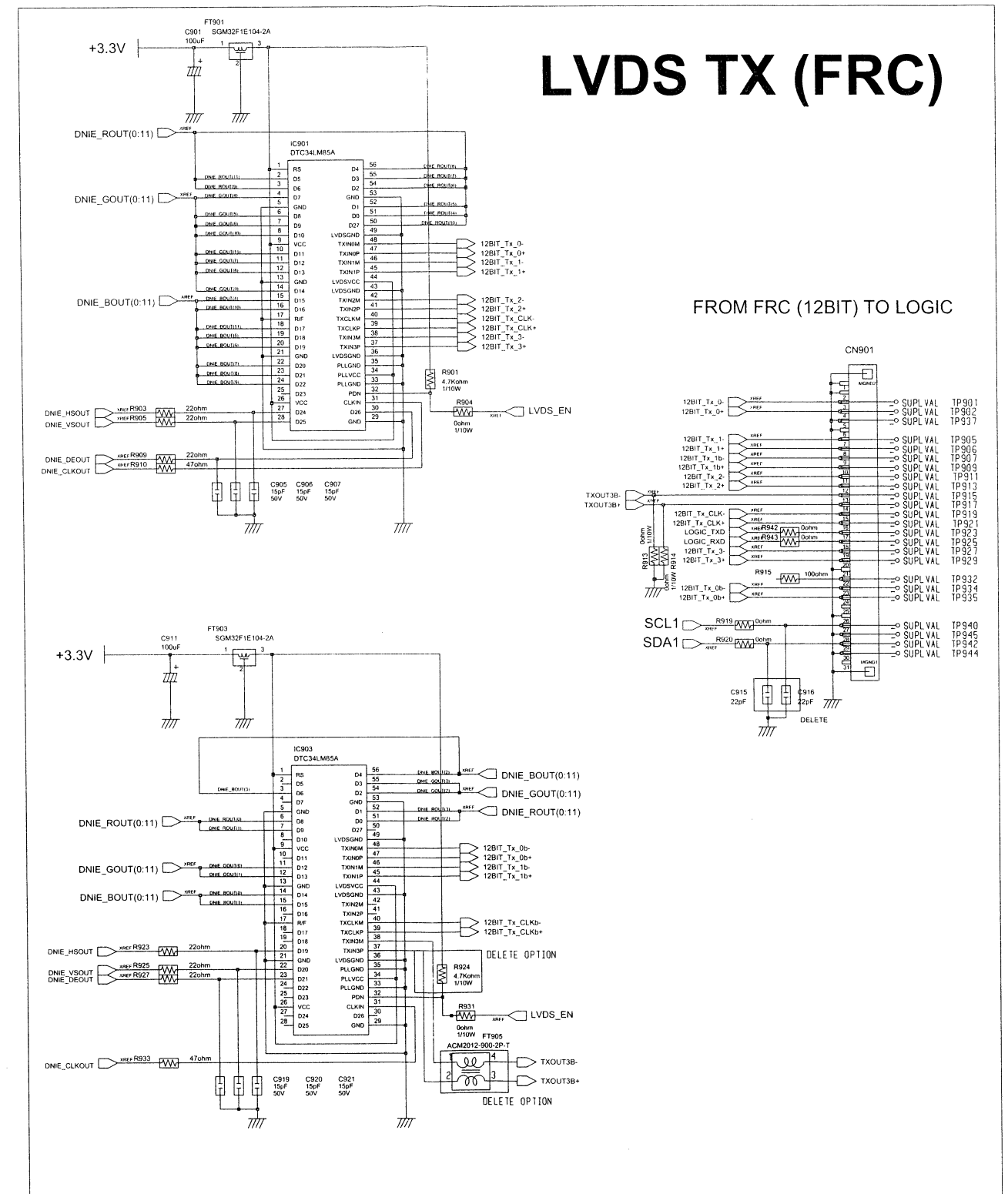
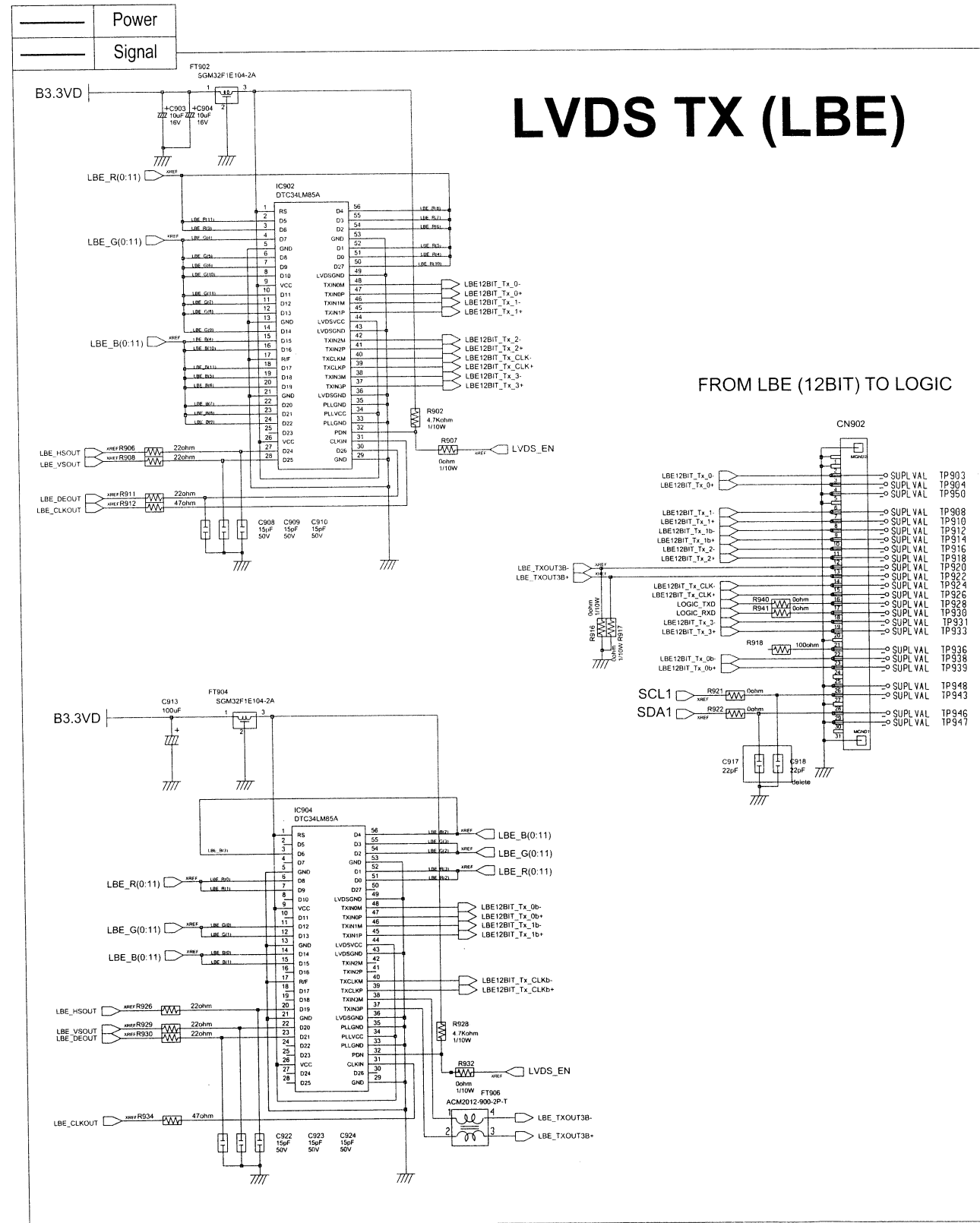
10-6 TUNER


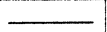
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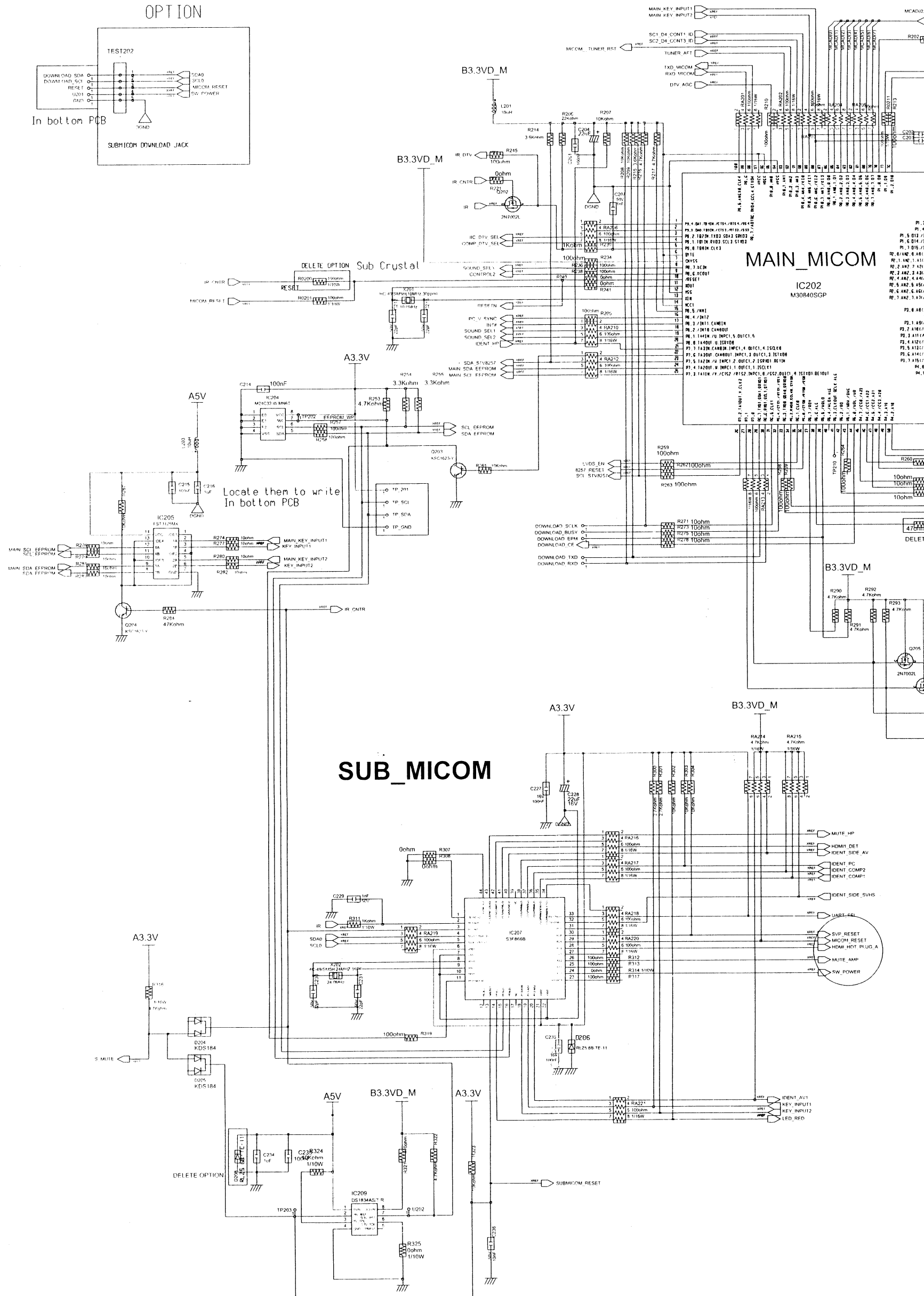
10-9 LVDS

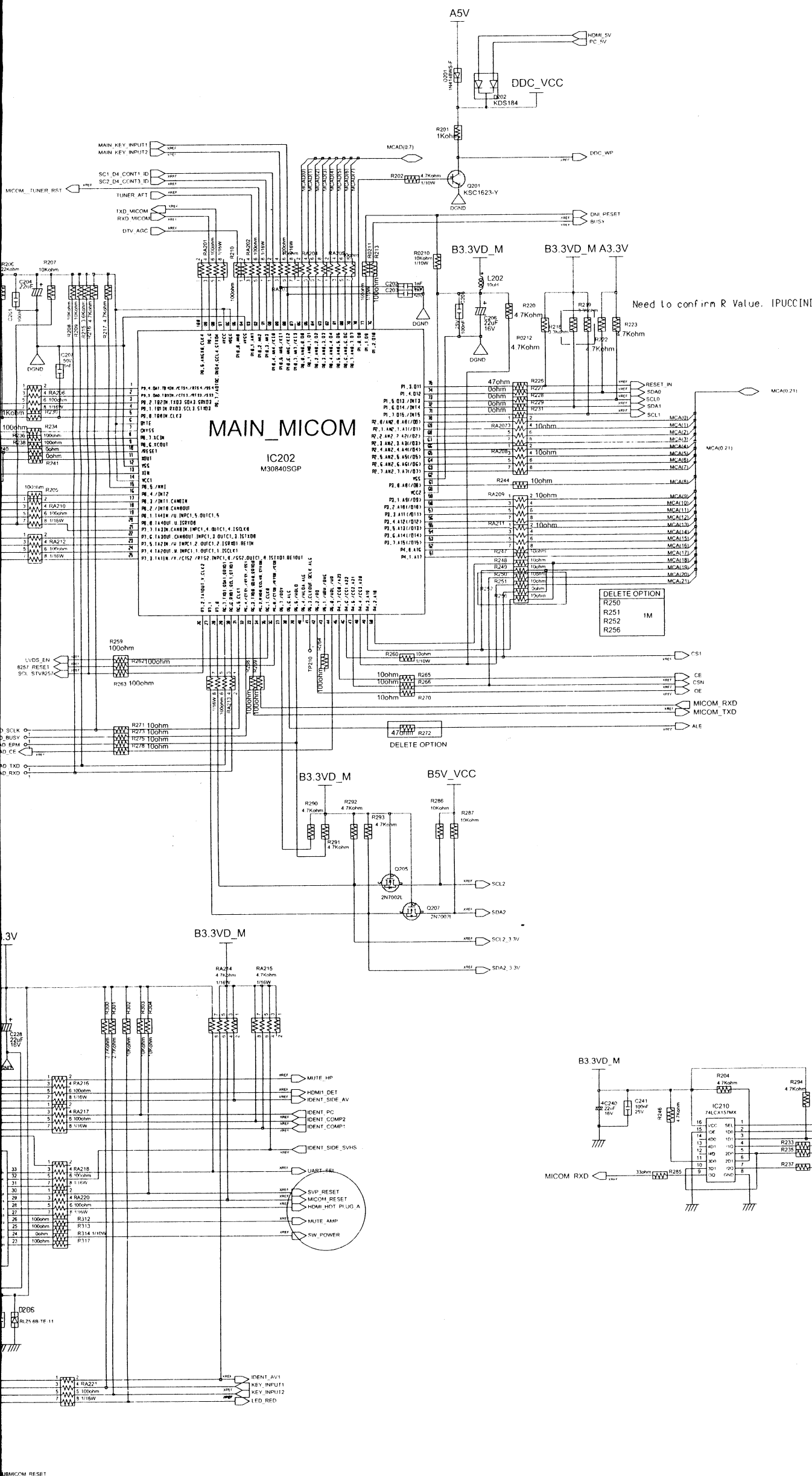
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	Power
	Signal

MICOM





FLASH

